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ANALYTICAL RESULTS REPORT

RICO ARGENTINE
Rico, Dolores County, Colorado

TDD #9511-0015

JUNE 19, 1996



URS

OPERATING SERVICES, INC.

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Rico, Dolores County, Colorado

CERCLIS ID No. COD980952519

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**ANALYTICAL RESULTS REPORT for
EXPANDED SITE INSPECTION**

**Rico-Argentine
Rico, Dolores County, Colorado**

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1.0 INTRODUCTION

This Analytical Results Report (ARR) of the Rico-Argentine site in Rico, Dolores County, Colorado (CERCLIS ID # COD980952519), has been prepared to satisfy the requirements of Technical Direction Document (TDD) No. 9511-0015 issued to URS Operating Services, Inc. (UOS) on November 22, 1995, and amended by TDD No. 9511-0015A on January 25, 1996, by the Region VIII office of the U.S. Environmental Protection Agency (EPA). Field work at the Rico-Argentine site was conducted during the week of September 11 through 15, 1995, and followed the Expanded Site Inspection (ESI) format (U.S. Environmental Protection Agency (EPA) 1992).

Field activities were conducted by URS Consultants, Inc. (URS) and followed the applicable URS Technical Standard Operating Procedures (TSOPs). Field activities specifically included collecting 45 environmental samples comprised of 16 source samples, 11 surface water and 11 sediment samples, 6 residential soil samples, and 1 groundwater sample, plus 9 field Quality Assurance/Quality Control (QA/QC) samples (in addition to the laboratory matrix spike/matrix spike duplicate (MS/MSD) (Table 3). Non-sampling activities included gauging the flow of Silver Creek, Scotch Creek and the Dolores River, describing and delineating wetlands for approximately one mile along the Dolores River downstream of the confluence with Silver Creek, and measuring water quality parameters (pH, temperature and conductivity) at five non-sampling locations (Figure 2).

The samples were shipped through the contract laboratory program (CLP), routine analytical services (RAS). Samples that were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs) and pesticides/PCBs were sent to RECRA Environmental, Columbia, Maryland. Samples that were analyzed for cyanide and total or dissolved metals were sent to Southwest Labs of Oklahoma at Broken Arrow, Oklahoma. This ARR is intended to be used in conjunction with the Rico-Argentine Field Sampling Plan (FSP) (URS Consultants, Inc. (URS) 1995a) and the Rico-Argentine Sample Activities Report (URS 1995b) (Appendix A).

2.0 OBJECTIVES

The purpose of the ESI was to gather data pertinent to the evaluation of the Rico-Argentine site with regard to the EPA's Hazard Ranking System (HRS) criteria. The specific objectives of the ESI were to:

- Acquire and utilize non-sampling data (i.e., existing reports, analytical data or physical measurements) documenting past releases from the site source areas;
- Identify and delineate receptor targets for the surface water and groundwater pathways;
- Determine resident populations subject to contamination via the soil exposure pathway;
- Document potential release of site contaminants to users of groundwater from the alluvial aquifer; and
- Document potential releases of site contaminants to targets along the surface water pathway.

3.0 BACKGROUND INFORMATION

3.1 SITE LOCATION AND DESCRIPTION

The Rico-Argentine site is located in the Rico Mountains of southwestern Colorado and encompasses approximately 75 acres of settling ponds and tailings piles north and east of the town of Rico in Eastern Dolores County, Colorado (Figures 1 and 2). The legal description of the site is the southeast quarter of Section 25, T. 40 N, R. 11 W. The approximate site coordinates are 37° 42' 05" North latitude and 108° 01' 39" West longitude (U.S. Geological Survey (USGS) 1960). The Rico-Argentine site can be reached by proceeding south from Telluride, Colorado, on State Highway 145 over Lizard Head Pass to the town of Rico, or by proceeding north from Cortez, Colorado, on State Highway 145 to the town of Rico.

3.2 SITE DESCRIPTION

The Rico-Argentine site is an inactive mining and milling operation located in two drainages, the Dolores River and its tributary Silver Creek. Part of the site is within the northern and eastern city limits of Rico, Colorado. One part of the site extends northeastward up the Silver Creek drainage, and another part extends northward along the east bank of the Dolores River drainage (Figure 2). The Rico-Argentine Mill, Blain Tunnel and two large tailings piles are located adjacent to Silver Creek, approximately one mile east northeast of the town of Rico (Figure 2). The St. Louis Tunnel adit, an inactive sulfuric acid plant, two inactive cyanide heap leach basins, 11 settling ponds, and two hot spring feed ponds are located along the east bank of the Dolores River approximately 1/4 to 3/4 miles north of the town of Rico (Figure 2). Water from the underground mine working associated with the Rico-Argentine site drains from the mine to the St. Louis Tunnel adit, where it flows into the settling pond system prior to discharging into the Dolores River (URS 1995a; URS 1995b).

The Rico-Argentine has a National Pollutant Discharge Elimination System (NPDES) permit (#CO-0029793) dating from 1976, and has frequently been in violation of permit standards (U.S. Environmental Protection Agency (EPA) 1994). The discharge has also been regulated under the Colorado Pollutant Discharge Elimination System (CPDES). The discharge averages approximately 1.1 million to 1.5 million gallons per day (EPA 1994).

The Rico, Colorado, area has been heavily mined and several potential sources of contamination, primarily settling ponds and tailings piles, have been identified along Silver Creek and the Dolores River (URS 1995a). The exact origin of all of the specific potential sources is unknown. The area surrounding the Rico-Argentine site is primarily Bureau of Land Management (BLM) land located within the San Juan National Forest, with surrounding peaks reaching 14,000 feet above mean sea level (msl) and summits in the local Rico Mountains reaching more than 12,000 feet above msl. The town of Rico and the settling ponds along the east bank of the Dolores River are at 8,800 feet above msl and the Rico-Argentine Mill and tailings along Silver Creek are at 9,200 feet above msl (USGS 1960).

3.3 SITE HISTORY AND PREVIOUS WORK

The Rico area has an extended mining history of which a detailed account can be found in the Site Inspection Prioritization Report (URS 1994). Early mining activity in the Rico area began in the 1860s when several claims were staked in the Pioneer District at the confluence of Silver Creek with the Dolores River. Silver production reached a peak in 1893. In 1902, all of the important mines in the district were consolidated under the United Rico Mine Company which primarily produced base metal ores. The Rico-Argentine Mining Company, was formed in 1915 to produce base metal ores. A custom mill was built in 1926 by the International Smelting Company, a subsidiary of Anaconda Mining Company. Base metal ore production peaked in 1927 but by 1928 the mill had shut down and by 1932 all mining activity in the area had ceased (USGS 1974).

The Rico-Argentine Mining Company resumed sporadic mining activities in 1934 and resumed steady production in 1939 (State of Colorado, Department of Natural Resources, Bureau of Mines (BOM) 1939a; BOM 1939b). A sulfuric acid plant located north of the settling ponds along the Dolores River was operated between 1955 and 1964 (USGS 1974). All mining operations again ceased in 1971 and most of the mine workings were allowed to flood and drain through the St. Louis Tunnel (BOM 1971).

The Rico-Argentine Mining Company built a 300-foot by 500-foot leach pad next to the old sulfuric acid plant in 1973. A cyanide solution was used to leach silver and gold from raw ore, and an overflow of an unknown quantity of leaching liquor to the Dolores River occurred sometime in 1974 (BOM 1974). In 1975 an additional cyanide leach pad was constructed in a settling pond originally used by the acid plant (BOM 1975).

A Notice of Violation (NOV) and a Cease and Desist Order (CDO) were issued to the Rico-Argentine Mining Company in 1990 by the Colorado Department of Health and Water Quality Control Division because of the company's failure to meet the compliance of its NPDES permit (EPA 1994).

A review of the Colorado Department of Public Health and the Environment Water Quality Control Division's files, for the Rico-Argentine CDPS Permit No. CO-0029793, revealed the following discharge permit condition violations in 1995 (State of Colorado Department of Public Health and the Environment (CDPHE) 1988):

TABLE 1
Discharge Permit Condition Violations in 1995
(reported in mg/l)

Report Period	Parameter	Reported Results	Permit Conditions
04/95	Total Recoverable Cadmium	0.0035 (30-day avg.)	0.0004 (30-day avg.)
04/95	Total Recoverable Zinc	0.57 (30-day avg.)	0.237 (30-day avg.)
05/95	Total Recoverable Cadmium	0.0065 (30-day avg.)	0.0004 (30-day avg.)
05/95	Total Recoverable Zinc	0.75 (30-day avg.)	0.237 (30-day avg.)
07/95	Total Recoverable Cadmium	0.0125 (30-day avg.)	0.0004 (30-day avg.)
07/95	Total Recoverable Zinc	2.85 (30-day avg.)	0.237 (30-day avg.)
09/95	Total Recoverable Cadmium	0.0025 (30-day avg.)	0.0004 (30-day avg.)
09/95	Total Recoverable Zinc	0.37 (30-day avg.)	0.237 (30-day avg.)

Anaconda purchased the property in 1980 and in response to the outstanding NOV and CDO, carried out several environmental efforts such as building a water treatment plant at the St. Louis Tunnel discharge, capping wells, plugging adits, and stabilizing tailings and treatment ponds (Anaconda Minerals Company (AMC) 1994).

The EPA collected surface water and sediment samples from Silver Creek and the Dolores River during a site inspection conducted in November 1984. Analytical results indicated that the surface water and sediments contained elevated concentrations of arsenic, cadmium, copper, iron, lead, manganese and zinc (Ecology and Environment (E&E) 1985).

Rico Development Corporation purchased the property in 1988 (CDPHE 1988). NOV's and CDOs were issued to Rico Development Corporation in 1990 for violations of the NPDES permitted discharge levels of lead and silver standards, in 1993 for violations of the silver standards, and in 1994 for violations of silver, lead and zinc standards (CDPHE 1995; EPA 1994).

The U.S. Department of Interior, Bureau of Reclamation conducted surface water and sediment sampling in the Dolores River and its tributaries between 1989 and 1993. The results show Silver Creek to be a major, but not the only, source of mercury and other heavy metals in the upper Dolores River Basin (U.S. Department of the Interior, Bureau of Reclamation, undated).

The Atlantic Richfield Corporation (ARCO) has initiated a voluntary environmental site characterization of the town of Rico and surrounding area within the framework of the Colorado Voluntary Cleanup and Redevelopment Act (PTI Environmental Services and ESA Consultants 1995).

3.4 SITE GEOLOGY

Detailed information about the geology of the Rico, Colorado, area can be found in "Geology and Ore Deposits of the Rico District, Colorado," by Edwin T. McKnight (USGS 1974). The geology of the Rico District is extremely complex in detail. The dominant structure of the district is a faulted dome centered on a monzonite stock. Sedimentary strata exposed in the area are the Ouray and Leadville limestones, overlain by the Hermosa Formation, whose limestone beds are the source of the district's massive sulfide ore deposits. The youngest sedimentary strata in the Rico District is the red beds of the Cutler Formation. The lower slopes of the Rico District are generally covered by debris resulting from wash, talus and landslide processes (USGS 1974). Surface materials in the valley sides and bottoms are glacial or stream deposits (URS 1995c).

3.5 SITE HYDROGEOLOGY

A shallow unconfined aquifer is located in the glacial, stream, wash, talus and landslide debris found along the valley floors. Groundwater in the shallow aquifer would be greatly influenced by seasonal weather conditions and the nearby surface water bodies. Conductivity is assumed to be high, between 10^{-2} to 10^1 centimeters per second (cm/sec) (USGS 1987). Groundwater flow should follow the valley contours.

Deeper bedrock aquifers are found at the site. Several exploratory drill holes along the Dolores River portion of the site flowed water and were capped (AMC 1988; AMC 1994). Two exposed and several underwater geothermal springs are found along the Dolores River. Water quality data in Table 2 from the two exposed geothermal springs indicates a common source. Water flowing from these springs is depositing calcium carbonate and iron about the springs and there are visible geothermal deposits between the springs and the town of Rico (URS 1995a; URS 1995c).

TABLE 2
Geothermal Springs Water Quality (9-12-95)

	Water Temp. (°F)	pH (Std Units)	Conductivity (μ S/cm)	Flow (gal/min)
Hot Tub Spring	107.9	6.60	7,280	30-50
2nd Hot Spring	107.3	6.66	7,080	15-20

3.6 SITE HYDROLOGY

The Rico-Argentine site is located in the Dolores River Basin. The Dolores River and its tributary Silver Creek are the major surface water bodies in the area. The Dolores River flows to the south past the St. Louis Tunnel adit, the old sulfuric acid plant, the cyanide heap leach basins, the tailings piles, settling ponds and the NPDES Outfall 002 (Figure 2). Silver Creek flows from the east, past the old mill site and several tailings piles and through the town of Rico before joining the Dolores River west of Rico (Figure 2). The 41-year annual mean flow on the Dolores River,

approximately four miles below the town of Rico, is 136 cubic feet per second (cfs) and the upstream drainage basin encompasses 105 square miles (USGS 1993). The flow rate of Silver Creek was measured during the September 14, 1995, field work at sample station RA-SW/SE-07 (Figure 2). The average of three readings was 10.1 cfs and the upstream drainage basin of Silver Creek encompasses an estimated seven square miles (USGS 1976; URS 1995b).

3.7 SITE METEOROLOGY

The Rico-Argentine site is located in a semiarid climate zone. The mean annual precipitation, as totaled from the University of Delaware (UD) database, is 12.8 inches. The net annual precipitation as calculated from precipitation and evaporation data obtained from the UD is 4.1 inches (University of Delaware (UD) 1986). The 2-year, 24-hour rainfall event for the site is approximately 1.5 inches (Dunne and Leopold 1978).

4.0 FIELD OPERATIONS

Field operations for the Rico-Argentine ESI included the collections of groundwater, surface water, sediment, residential soil and source samples. Other tasks performed during the field operations at the site included wetlands characterization, stream flow measurements, interviews with local residents, characterization of thermal springs and measurement of field water quality parameters for non-sampled tributary streams of the Dolores River.

4.1 SAMPLE COLLECTION ACTIVITIES

Sampling activities included the collection of 45 samples, specifically 16 source, 1 groundwater, 11 stream surface water, 11 stream sediment and 6 residential soil samples. Additionally, 9 QA/QC samples plus a laboratory MS/MSD were collected. Table 3 lists the sample locations and rationale for each sample.

4.2 NON SAMPLE COLLECTION FIELD ACTIVITIES

The following non-sampling activities were conducted during the Rico-Argentine ESI (URS 1995b):

- Delineation and characterization of wetlands along the Dolores River for approximately one mile downstream of the confluence with Silver Creek.

Unconsolidated bottom land obligate wetlands were identified along the Dolores River downstream of the confluence with Silver Creek. Individual wetlands are less than one acre in size. Obligate emergent wetlands are located immediately south of Rico and approximately one mile south of the confluence of Silver Creek and the Dolores River, on the Dolores River between sample stations RA-07 and RA-08 (Figure 2). The wetlands on the west side of the Dolores River cover approximately two to three acres and the wetlands on the east side of the river are less than one acre in size.

- Measuring the flow of the NPDES Outfall 002 flume, Silver Creek and the Dolores River within the site boundaries on September 15, 1996. Site investigators employed a Marsh McBirney flow meter to measure these flows.

The flow of the NPDES Outfall 002 flume was measured and determined to be 6.25 cfs or approximately 540,000 cubic feet per day.

Three stream flow measurements were taken of Silver Creek at sample station RA-07 (Figure 2). These flow measurements were 10.35 cfs, 11.00 cfs, and 8.96 cfs. The average of these three readings is 10.1 cfs, or approximately 872,000 cubic feet per day.

The flow of the Dolores River was measured and determined from a single measurement taken between sample stations RA-02 and RA-03 (Figure 2). The flow was measured at 48.16 cfs or approximately 4,160,000 cubic feet per day. This flow measurement

compares well with the flow published for the U.S. Geological Survey's (USGS's) Montelores Bridge gauging station downstream of Rico (Figure 2) which for September 15, 1993 was 51 cfs and for September 15, 1994, was 69 cfs (USGS 1993; USGS 1994).

- Interviewing local residents to determine if any anecdotal evidence could be discovered concerning use of mine tailings as fill or construction material in the town of Rico.

The field teams interviewed over a dozen local residents, many of whom have lived in Rico for decades. No construction or fill materials were positively identified by local residents as derived from mine tailings. Material which the residents or field crews believed were characteristic of mine tailings were preferentially sampled.

- Characterization of thermal springs by measuring flow and the field parameters of pH, conductivity and water temperature.

Field water quality readings were taken and flow estimated for the two subaerial thermal springs located at the site (Table 2). Similar water quality parameters indicate a common source. Several other hot springs were noted to be bubbling through ponds located south of the settling ponds.

- Measuring field water quality parameters of pH, conductivity and water temperature of six tributary streams entering the Dolores River below the town of Rico, Colorado, as a screen for unusual conditions which would trigger sampling.

All tributary streams exhibited normal ranges of pH, conductivity and temperature. No opportunity sampling of the tributaries was required.

5.0 ANALYTICAL DATA

5.1 DATA VALIDATION AND INTERPRETATION

The sample data collected during this ESI was reviewed using the HRS guidelines for analytical interpretation (Office of the Federal Register 1990). As reported in the analytical results in Tables 4 through 21, elevated concentrations of contaminants, as noted by a star (★), are determined by sample concentrations based on the following:

- If the sample concentrations are greater than or equal to three times the highest background sample concentrations and greater than or equal to five times the blank concentrations and greater than or equal to the sample quantitation limit (SQL); and
- If not detected in background or blank samples, the sample concentrations are greater than or equal to the SQL.

All data analyzed by the CLP RAS laboratories were validated by the Environmental Services Assistance Team (ESAT). All data are acceptable for use as qualified in the data validation report. The complete data validation report, laboratory forms and SQL calculations are located in Appendix D.

5.2 QUALITY ASSURANCE/QUALITY CONTROL SAMPLES

The results of QA/QC samples are presented in Tables 20 and 21. The inorganic analyses of field QA/QC samples included rinsate samples and indicate that the decontamination procedures were effective (Table 20). There are no confirmed detections of inorganic compounds that are above the Contract Required Quantitation Level (CRQL). The organic analyses of QA/QC samples included trip and rinsate blanks collected from de-ionized water in the field (Table 21). The QA/QC sample results presented in Table 21 show only detections of acetone and chloroform which are common laboratory contaminants. These laboratory contaminants have been corrected for in the final analytical results.

6.0 SOURCE CHARACTERIZATION

6.1 SOURCE SAMPLE LOCATIONS

Source Samples were collected from the two abandoned cyanide leach pits along the Dolores River (RA-WSO-01 and RA-WSO-02), a spring flowing from beneath the abandoned cyanide leach pits (RA-WSW-09), the St. Louis Tunnel outfall (RA-WGW-01), the hot-tub geothermal spring (RA-WGW-02) (Photo 5), the uppermost settling pond (RA-WSW-01/RA-WSE-01) (Photo 1), the lowermost settling pond (RA-WSW-02/RA-WSE-02), the drainage ditch between the upper settling ponds and the Dolores River (RA-WSW-03/RA-WSE-03) (Photo 4), the stained soil adjacent to a fuel tank at the mill site (RA-WSO-08), the tailings piles along upper Silver Creek, just below the old mill building (RA-WSO-03 and RA-WSO-04) (Photo 2), tailings at the confluence of Silver Creek and the Dolores River (RA-WSO-05), and from two tailings piles along the Dolores River south of Rico (RA-WSO-06 and RA-WSO-07) (Photos 12 and 13). Please refer to Figure 2 for the exact sample locations and to Table 3 for sample rationale.

The source samples can be divided into three different groups: soils and tailings along Silver Creek and the Dolores River; the tailings ponds along the Dolores River; and the groundwater sources. The background for inorganic and organic soil parameters are found in Tables 9 and 10, as background sample RA-SO-01. Background for inorganic and organic surface water and sediment parameters are found in Tables 14 through 19 as background samples RA-SW-01 (Dolores River) and RA-SW-05 (Silver Creek). Background for inorganic and organic groundwater parameters can be found in Tables 10 and 11 as background sample RA-GW-01.

Source areas are posted but are not secured from public access. There are several locations along Silver Creek and the Dolores River where tailings were noted to be slumping into surface water bodies. The settling ponds along the Dolores River are in good condition and no evidence of a spill was located during the field work (URS 1995b).

6.2 SOURCE ANALYTICAL RESULTS

Source samples contained a total of six VOCs. Acetone, carbon disulfide, 2-butanone, 2-hexanone, tetrachloroethene, and toluene were all detected in source soils and tailings (Table 5). Only acetone and 2-butanone were detected, in a single sample, above the method detection limit. This sample was an opportunity sample from underneath a leaking fuel tank at the Silver Creek Mill site. A single acetone detection below the method detection limit, was reported in the uppermost settling pond (Table 7).

Source samples contained a total of 12 SVOCs. Chrysene, fluoranthene, bis(2-ethylhexyl) phthalate, di-n-octylphthalate, butylbenzylphthalate, di-n-butylphthalate, pyrene, phenanthrene, benzo (a) anthracene, benzo (b) fluoranthene, benzo (a) pyrene, and phenol were all detected below the method detection limit and flagged as estimated by the validator (Tables 5 and 7).

Source samples contained a total of 10 pesticides. Aldrin was detected in three samples below the method detection limit (Tables 5 and 7). All other pesticides were detected in the opportunity soil sample (RA-WSO-08, Table 5) from beneath a leaking fuel tank. The pesticides detected are aldrin, endosulfan II, endrin aldehyde, endrin ketone, heptachlor, gamma-Chlordane, 4,4'-DDE, 4,4'-DDD, endosulfan sulfate, and methoxychlor. All detections were below the method detection limit except endrin ketone, 4,4'-DDE and 4,4'-DDD (Table 5).

Source samples were analyzed for cyanide. Background for cyanide in the Rico area is approximately 0.5 parts per million (ppm). Source samples from the Rico-Argentine site can be divided into two groups, one group that is near background and one group that is approximately 10 times background. Source sediment/soil samples from the uppermost cyanide leach pit (RA-WSO-01), the tailings piles along Silver Creek (RA-WSO-03 and RA-WSO-04), and the uppermost settling pond (RA-WSE-01) all recorded cyanide levels greater than background and are reported as elevated concentrations (Tables 4 and 6).

Source samples that were analyzed for inorganic analytes other than cyanide indicated elevated concentrations above the background for aluminum, antimony, arsenic, barium, cadmium, calcium,

chromium, copper, iron, lead, mercury, nickel, selenium, silver, thallium and zinc (Tables 4 and 6). The analytical results were generally between approximately two to ten times background and are characteristic of mining waste material. Most of the elevated readings were from the tailings piles along Silver Creek and the Dolores River where cadmium, calcium, copper, iron, lead, silver and zinc occurred in most samples at between five to ten times background. There appears to be no discernable difference between the tailings along Silver Creek and the tailings along the Dolores River. The sample from the upper cyanide leach pit has elevated concentrations from background of aluminum, chromium, iron, lead, nickel and silver and the sample from the lower cyanide leach pit has slightly elevated concentrations from background of cadmium, copper, iron and nickel (Table 6). The samples from the settling ponds indicate that all the settling pond water and sediments have elevated concentrations of calcium. Calcium is used in the water treatment process to reduce the acidity of the mine water outfall (Anaconda Minerals Company 1994). Sediment in the uppermost (first) settling pond contains elevated concentrations of aluminum, antimony, arsenic, cadmium, calcium, copper, and lead; and the aqueous sample from the uppermost settling pond contains elevated levels of calcium and copper (Table 6).

7.0 GROUNDWATER PATHWAY

7.1 GROUNDWATER SAMPLE LOCATIONS

Only one groundwater sample was collected during this ESI. This groundwater sample was collected from the domestic well at the Rico Ranger Station, northwest of the site. Please refer to Figure 2 for the exact sample location and to Table 2 for the sample rationale. The sample was specifically collected from the spigot used as a source of water for the trailer where the summer staff lives on site. The well draws water from valley fill talus, landslide, and alluvial material, and is across the Dolores River (west) and topographically above the site (URS 1995c).

7.2 GROUNDWATER ANALYTICAL RESULTS AND TARGETS

Analytical results of the groundwater sample did not reveal the presence of any organic compounds (Table 9). Analytical results of the inorganic samples, both total and dissolved metals,

show detectable concentrations of barium, calcium, magnesium, manganese, potassium, sodium and zinc (Table 8). The detections and concentrations of inorganics detected in the groundwater well do not indicate contamination or contact with the source areas of the Rico-Argentine site.

8.0 RESIDENTIAL SOIL EXPOSURE PATHWAY

8.1 RESIDENTIAL SOIL SAMPLE LOCATIONS

Residential soil samples were collected from six properties within the town of Rico (Photos 7, 8, 9, 10, and 11). Please refer to Figure 2 and Table 3 for exact sample locations and rationale. Signed access agreements were obtained from all property owners before the sample was taken. Samples were taken from areas on the properties that the field crew or residents believed could potentially contain fill material derived from local mine workings.

8.2 RESIDENTIAL SOIL ANALYTICAL RESULTS AND TARGETS

There were no detections of VOCs in any of the residential soil samples (Table 9). There were detections of 17 SVOCs, primarily in samples RA-SO-02, RA-SO-04 and RA-SO-05, and estimated detections of three SVOCs were made in sample RA-SO-06. The compounds detected were generally qualified as estimated, except for detections at RA-SO-02, because quality control criteria were not met. Minor estimated detections of three SVOCs were made in sample RA-SO-06. The compounds positively identified from sample RA-SO-02 are fluoranthene, pyrene, benzo (a) anthracene, chrysene, benzo (b) fluoranthene, benzo (k) fluoranthene, and benzo (a) pyrene.

Pesticides were detected in small amounts in all samples at low concentrations, which were estimated because quality control criteria were not met (Table 13). The pesticides detected were endosulfate, 4,4'-DDD, heptachlor, aldrin, heptachlor epoxide, endosulfan I, 4,4'-DDE, endrin, 4,4'-DDT, endrin ketone, alpha-chlordane, gamma-chlordane, and delta-BHC. These compounds could be expected to be present if commercial pesticides were used at these homes. These compounds are not associated with any Rico-Argentine source.

The inorganic results for two of the residential soil samples, RA-SO-03 and RA-SO-05, were very close to background. Four of the samples, RA-SO-02, RA-SO-04, RA-SO-06 and RA-SO-07, exhibited elevated concentrations of inorganics (Table 12). Elevated concentrations of copper were found in four samples. Elevated concentrations of lead were found in three samples, RA-SO-02, RA-SO-04, and RA-SO-07. Elevated concentrations of antimony, arsenic, manganese, mercury, silver, and zinc were found in at least two samples. Single detections, at separate locations, of cadmium, calcium, sodium, magnesium, vanadium and cyanide were recorded at elevated concentrations. When these locations are plotted on a map, the area defined by these elevated concentrations is approximately 776,000 square feet.

9.0 SURFACE WATER AND SEDIMENT PATHWAY

9.1 AQUEOUS AND SEDIMENT SAMPLE LOCATIONS

Three surface water and sediment samples, including a specific background sample, were collected from Silver Creek. Eight surface water and sediment samples, including a specific background sample, were collected from the Dolores River. Please refer to Figure 2 and Table 3 for exact sample locations and rationale.

The analytical results for each drainage are presented separately in the following discussions.

9.2 SILVER CREEK - AQUEOUS AND SEDIMENT ANALYTICAL RESULTS AND TARGETS

The background sample on Silver Creek (RA-SW/SE-05) was taken just upstream from the Rico municipal drinking water intake (Figure 1). A review of the analytical results presented in Tables 14 and 15 for Silver Creek and in Tables 16, 17, 18 and 19 for the Dolores River indicate that background conditions in both streams are similar.

Two qualified detections of tetrachloroethene (PCE) were made in sediment from Silver Creek (samples RA-SE-06 and RA-SE-07) (Table 15). Both detections are estimated values that are

below the detection limit. There was also a very low level estimated detection of tetrachloroethene made in the source sample RA-WSO-03 (Table 5) which was taken from tailings along upper Silver Creek.

Phthalates were detected from the background sample (RA-SE-05) and from the sample just below the tailings (RA-SE-06). The detections are probably the result of sample collection or laboratory contamination. The sediment in Silver Creek tended to be composed of cobbles and boulders and considerable digging and picking were required to collect a sufficient quantity of fine-grained sediment for analysis.

Elevated concentrations of iron, manganese, and zinc were detected in both of the downstream aqueous samples (Table 14). The samplers noted that water seemed to be seeping from beneath the tailings pile directly into the creek. The concentrations decreased from the sample station just below the Silver Creek tailings piles (RA-SE-06) to the sample station located on Silver Creek just before the confluence with the Dolores River (RA-SW-07). Photo 3 shows the rusty-colored iron staining near the location of sample station RA-SW-06. The rusty-colored staining was less noticeable at RA-SW-07.

Elevated concentrations of 14 inorganics were detected from sediment at sample station RA-SE-06 (Table 14). The sampling crew noted that the stream was in direct contact with the tailings. It was observed that tailings were slumping into the creek and that the creek bed appeared to be composed entirely of fine-grained tailings material derived from the tailings piles along the creek. Most of the elevated concentrations of inorganics were flagged by the validator as estimated because of the dilution required before the concentrated sample could be analyzed. Three metals were positively identified: beryllium, copper and selenium. Ten metals were identified and their quantity estimated because quality control criteria were not met. These 10 metals are aluminum, arsenic, cadmium, calcium, iron, lead, manganese, nickel, silver, and zinc.

An unqualified elevated concentration of copper was detected at RA-SE-07 located on Silver Creek just before the confluence with the Dolores River (Table 14). Elevated concentrations with estimated values were detected at RA-SE-07 for six inorganic compounds: arsenic, iron, lead,

manganese, silver, and zinc. Elevated concentrations at the downstream Silver Creek sample location (RA-SE-07) were between one-half to one-tenth those of the upstream location (RA-SE-06). Seven inorganic compounds, aluminum, beryllium, cadmium, calcium, nickel, selenium, and cyanide that were detected at elevated concentrations at the upper sample station (RA-SE-06) were not detected at elevated concentrations at the lower sample station (RA-SE-07).

A survey of Silver Creek from the Rico municipal water intake to the confluence with the Dolores River (Figure 2) performed during the URS field sampling in September 1995 did not detect any wetlands or evidence of a fishery. The flow of Silver Creek was determined to be approximately 10.1 cfs (see Section 4.2). Concrete reinforced rip-rap was in place along the upper end of the tailings pile along the Silver Creek stream course. This containment prevented the tailings from entering the stream. There were no containment features along the more downstream reaches of Silver Creek where tailings were coming into direct contact with the stream, as noted at sample location RA-SW/SE-06 (URS 1995b).

9.3 DOLORES RIVER - AQUEOUS AND SEDIMENT ANALYTICAL RESULTS AND TARGETS

Eight aqueous and sediment samples were taken along the Dolores River. The background sample was taken on the east bank of the river, across from the Rico Ranger Station. There is no indication, either physical or analytical, that the background location is influenced by the site.

The aqueous organic samples (Table 17) indicated only one isolated very low level detection of carbon disulfide at RA-SW-09. This location is south (downstream) of Rico and adjacent to approximately one acre of wetlands (Figure 2). This single organic detection does not appear to be related to any identifiable source.

The aqueous inorganic samples (Table 16) present a more consistent picture. Iron and manganese are found at elevated concentrations in all Dolores River samples downstream of the background sample (RA-SW-01). Zinc is detected at elevated concentrations in all Dolores River aqueous samples below RA-SW-02 (Figure 2). The highest concentrations of iron, manganese, zinc and

copper are also found in aqueous sample RA-SW-08. Iron at this location is 54 times background, manganese is 20 times background, zinc is 68 times background, and copper is 8 times background. These elevated concentrations cannot be traced directly back to Silver Creek or the Outfall 002 from the settling ponds, since concentrations actually decrease at the previous sample location on the Dolores River (RA-SW-04).

There are also elevated concentrations of aluminum from sample stations RA-SW-02 and RA-SW-08. These two stations report aluminum concentrations that are approximately ten times background and there is no apparent source for these concentrations. All other sample stations report aluminum readings near background (Table 16).

Organic sediment sample results from the Dolores River (Table 19) report an estimated result for tetrachloroethene at RA-SE-08. An elevated concentration of acetone is reported in the duplicate (RA-SE-11) and is probably due to laboratory contamination. Phthalates are reported at low concentrations in several samples and are probably the results of sample collection or laboratory contamination. 4-methylphenol is also estimated to be present below the detection limit in the most downstream sample and in the duplicate of that sample (RA-SE-10 and RA-SE-11). This is most likely the result of laboratory contamination.

Elevated concentrations of inorganic compounds are recorded at two sample stations on the Dolores River, stations RA-SE-08 and RA-SE-09 (Table 19 and Figure 2). Both of these sample stations are located near tailings piles that are being actively eroded by the Dolores River (Photos 12 and 13). There are no elevated concentrations of inorganic compounds reported for any other sediment sample along the Dolores River (Table 18). Copper is positively identified at elevated concentrations at both sample stations. The copper in the sediment is elevated to 9 times background at sample station RA-SE-08 and to 5.5 times background at the next most downstream location, RA-SE-09. Lead, manganese, and zinc are all detected at estimated quantities, below the detection limit but above background, at RA-SE-08 and RA-SE-09. The concentrations of lead, manganese, and zinc in the sediment range from three to five times background.

There is substantial evidence of sport fishing along the Dolores River in the Rico area. The field sampling crews observed and interviewed several cold water trout fisherman, particularly below Rico, between sample stations RA-SE/SW-08 and RA-SE/SW-10 (URS 1995b).

The field crew also measured and classified several wetlands for one mile along the Dolores River between the confluence of Silver Creek with the Dolores River and RA-SW/SE-09 (see section 4.2). Several small wetlands (less than one acre) were noted for the first three-quarters of a mile. A larger palustrine scrub/shrub (obligate) wetland, approximately five acres in size, was documented between three-quarters of a mile and one mile downstream of the Silver Creek/Dolores River confluence (Figure 2).

10.0 SUMMARY

Field work conducted at the Rico Argentine site in Rico, Colorado, during the week of September 11 through September 15, 1995, involved the collection of samples for laboratory analyses and non-sampling site specific information. This information has been used in this report to evaluate pathways and associated targets to determine if the Rico Argentine site potentially impacts the environment or human health.

The air pathway was not evaluated during this site inspection because no evidence was discovered during the background research which would indicate that a potential release to the air pathway was possible.

No groundwater users were identified during the field work. The only groundwater well located was the background well at the Rico Ranger Station. Data collected for this site inspection was inconclusive regarding the groundwater pathway.

Soil samples were collected from six residences. Organic compounds found in the residential soil samples can not be directly attributed to the site and are most likely the result of activities occurring at each specific residence. Samples from four of the residences had elevated concentrations of metals, which indicate that tailings material, from an unspecified source, could have been used as fill on the property. These locations define the boundaries of an area that covers approximately 766,000 square feet.

Aqueous and sediment samples were taken from Silver Creek and the Dolores River. The results of these samples indicate that there are localized incidents of metals entering the surface water and sediment of these streams from tailings that are not contained. Areas that appear to be potential sources of contamination are the lower part of the tailings piles on Silver Creek and the tailings piles that are being actively eroded along the Dolores River, south of Rico. These tailings piles appear to be a source for localized contamination that occurs immediately downstream of the tailings piles on Silver Creek and the Dolores River.

Source areas which are controlled by engineered containment features, such as the berm on the tailings on upper Silver Creek and the water treatment and settling pond system for the St. Louis Discharge do not appear to be the source for elevated concentration of metals in the surface waters and sediments of Silver Creek and the Dolores River. A review of the water quality data for the Dolores River ("pH on Dolores River" (Figure 3) and "Conductivity on Dolores River" (Figure 4) in Appendix A - Sample Activities Report) indicate that Outfall 002 and Silver Creek significantly influence water quality on the Dolores River at their respective points of confluence. A review of the analytical data from samples collected for this ESI indicates that Outfall 002 and Silver Creek are not the probable source of metals contamination in the Dolores River.

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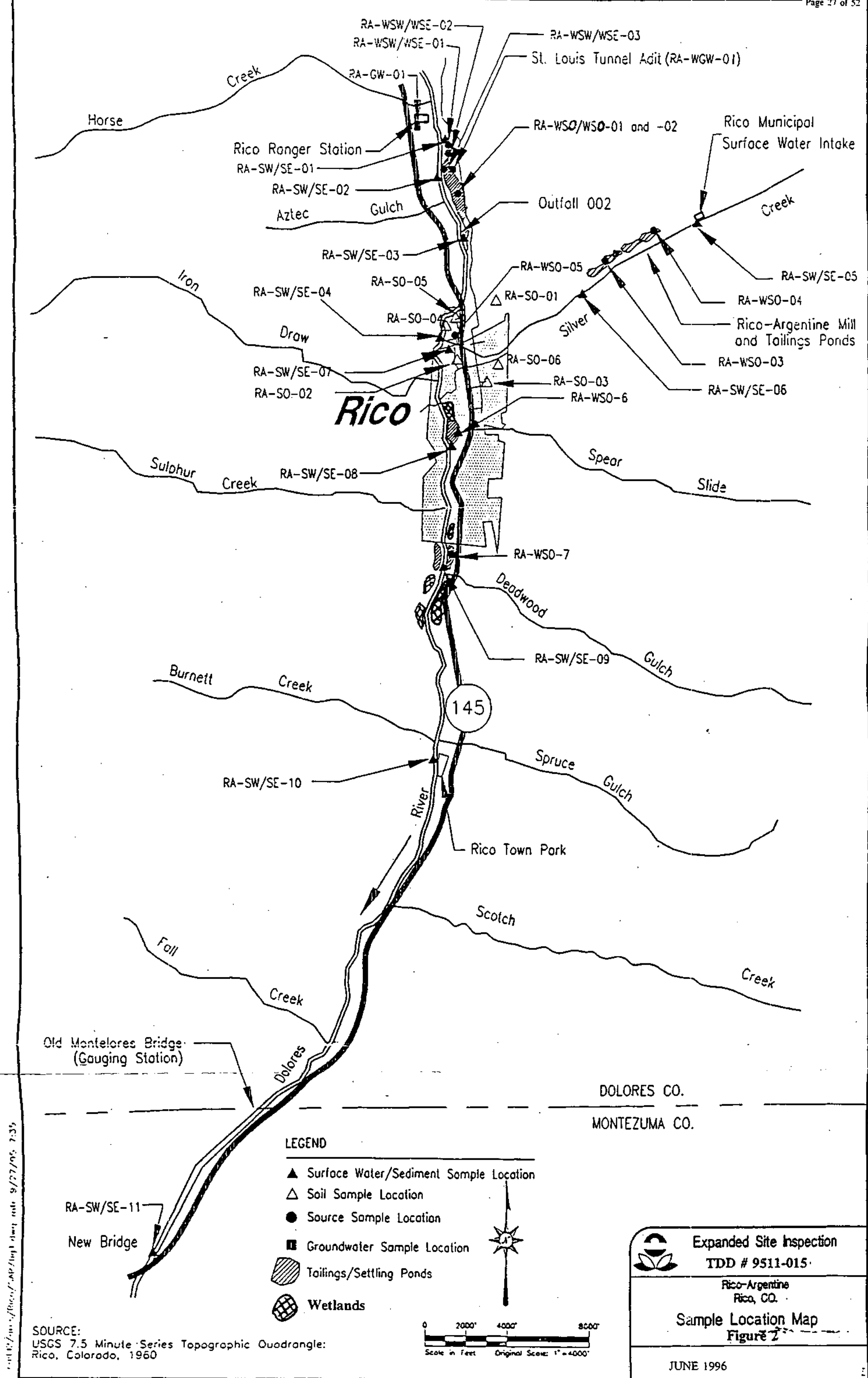
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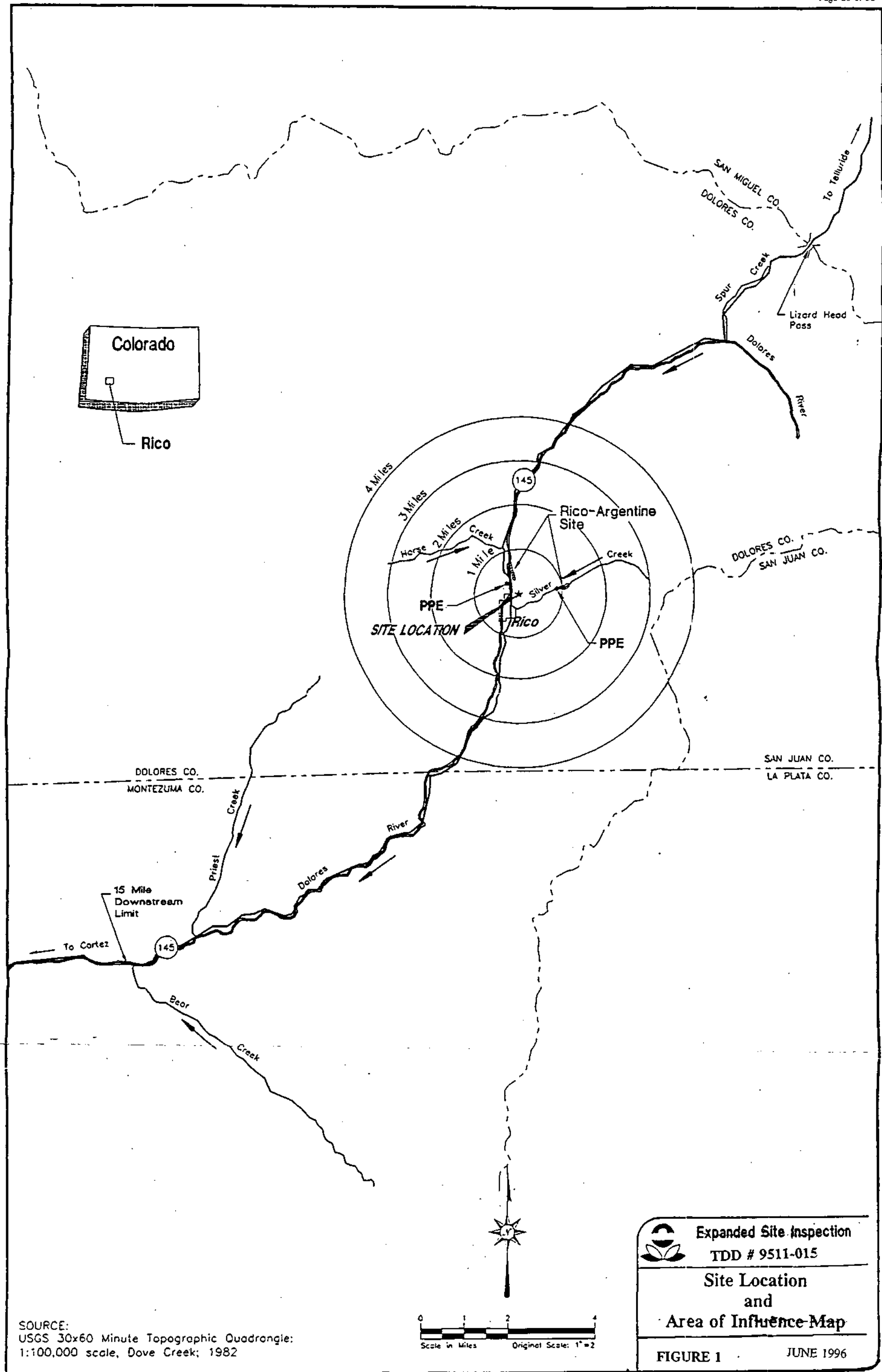
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SOURCE:
USGS 30x60 Minute Topographic Quadrangle:
1:100,000 scale, Dove Creek; 1982

TABLE 3
Sample Locations and Rationale

Sample Matrix	Sample ID	Location	Rationale
Surface Water	RA-SW-01	Upstream of site influences on the Dolores River.	Establish background conditions on the Dolores River.
	RA-SW-02	Adjacent to tailings piles on the Dolores River.	Test for impacted fishery.
	RA-SW-03	Confluence of drainage from settling ponds and the Dolores River.	Test for impacted fishery.
	RA-SW-04	Confluence of Silver Creek and the Dolores River.	Test for impacted fishery.
	RA-SW-05	Upstream of site influences on Silver Creek.	Establish background conditions on Silver Creek.
	RA-SW-06	Downstream of tailings piles on Silver Creek.	Test for impacted fishery.
	RA-SW-07	Silver Creek, downstream of tailings pile in town of Rico.	Test for impacted fishery.
	RA-SW-08	1.7 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SW-09	1.9 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SW-10	2.8 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SW-11	5.8 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
Sediment	RA-SE-01	Upstream of site influences on the Dolores River.	Establish background conditions on the Dolores River.

TABLE 3
Sample Locations and Rationale
(continued)

Sample Matrix	Sample ID	Location	Rationale
Sediment (continued)	RA-SE-02	Adjacent to tailings piles on the Dolores River.	Test for impacted fishery.
	RA-SE-03	Confluence of drainage from settling ponds and the Dolores River.	Test for impacted fishery.
	RA-SE-04	Confluence of Silver Creek and the Dolores River.	Test for impacted fishery.
	RA-SE-05	Upstream of site influences on Silver Creek.	Establish background conditions on Silver Creek.
	RA-SE-06	Downstream of tailings pile on Silver Creek.	Test for impacted fishery.
	RA-SE-07	Silver Creek, downstream of tailings pile in the town of Rico.	Test for impacted fishery.
	RA-SE-08	1.7 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SE-09	1.9 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SE-10	2.8 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SE-11	5.3 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
Surface Soil	RA-SO-01	Sample from off-site location, outside of site influences.	Establish background soil conditions.
	RA-SO-02	Opportunity soil sample from residential property in Rico.	Establish contaminated soil source area.

TABLE 3
Sample Locations and Rationale
(continued)

Sample Matrix	Sample ID	Location	Rationale
Surface Soil (continued)	RA-SO-03	Opportunity soil sample from residential property in Rico.	Establish contaminated soil source area.
	RA-SO-04	Opportunity soil sample from residential property in Rico.	Establish contaminated soil source area.
	RA-SO-05	Opportunity soil sample from residential property in Rico.	Establish contaminated soil source area.
	RA-SO-06	Opportunity soil sample from residential property in Rico.	Establish contaminated soil source area.
Groundwater	RA-GW-01	Groundwater sample from upgradient well in the Dolores River Valley.	Establish background conditions in same aquifer as downgradient groundwater sample.
Adit Sample	RA-WGW-01	Source sample from the outfall of the St. Louis Tunnel.	Characterize mine discharge from St. Louis Tunnel.
Hot Spring Sample	RA-WGW-02	Surface water sample from geothermal spring adjacent to settling pond.	Characterize public use geothermal spring.
Source Characterization	RA-WSO-01	Soil sample from abandoned cyanide leach pits along the Dolores River.	Characterize cyanide leach pits.
	RA-WSO-02	Soil sample from abandoned cyanide leach pits along the Dolores River.	Characterize cyanide leach pits.
	RA-WSO-03	Tailings piles along Silver Creek.	Characterize tailings piles.
	RA-WSO-04	Tailings piles along Silver Creek.	Characterize tailings piles.

TABLE 3
Sample Locations and Rationale
(continued)

Sample Matrix	Sample ID	Location	Rationale
Source Characterization (continued)	RA-WSO-05	Tailings pile at confluence of Silver Creek and the Dolores River.	Characterize tailings pile.
	RA-WSO-06	Tailings pile along the Dolores River, south of Rico.	Characterize tailings pile.
	RA-WSO-07	Tailings along the Dolores River, one mile south of Rico.	Characterize tailings pile.
	RA-WSO-08	Opportunity soil sample from soil in the vicinity of fuel tank at the mill site.	Characterize former contents of empty tank.
	RA-WSW-01	Aqueous sample from uppermost settling pond adjacent to the Dolores River.	Characterize contents of settling pond.
	RA-WSW-02	Aqueous sample from lowermost settling pond adjacent to the Dolores River.	Characterize contents of settling pond.
	RA-WSW-03	Aqueous sample from ditch adjacent to upper settling ponds along the Dolores River.	Characterize contents of ditch.
	RA-WSE-01	Sediment sample from uppermost settling pond adjacent to the Dolores River.	Characterize contents of settling pond.
	RA-WSE-02	Sediment sample from lowermost settling pond adjacent to the Dolores River.	Characterize contents of settling pond.
	RA-WSE-03	Sediment sample from ditch adjacent to upper settling ponds along the Dolores River.	Characterize contents of ditch.

TABLE 3
Sample Locations and Rationale
(continued)

Sample Matrix	Sample ID	Location	Rationale
QA/QC	RA-SW-18	VOA Trip Blank Sample	Document contamination introduced during sample handling and shipping.
	RA-SW-19	VOA Trip Blank Sample	Document contamination introduced during sample handling and shipping.
	RA-SW-20	VOA Trip Blank Sample	Document contamination introduced during sample handling and shipping.
	RA-SW-22	Rinsate Blank Sample	Document thoroughness of decontamination procedures on soil sampling equipment
	RA-SW-23	Rinsate Blank Sample	Document thoroughness of decontamination procedures on soil sampling equipment
	RA-SW-24	Rinsate Blank Sample	Document thoroughness of decontamination procedures on sediment sampling equipment.
	RA-SW-25	Rinsate Blank Sample	Document thoroughness of decontamination procedures on soil sampling equipment.
	RA-SW-26	Duplicate of RA-SW-04	Determine the precision of sample collection procedures and laboratory analyses.
	RA-SW-27	Duplicate of RA-SW-11	Determine the precision of sample collection procedures and laboratory analyses.
	RA-SW-93	VOA Trip Blank Sample	Document contamination introduced during sample handling and shipping.

TABLE 4
Source Soils and Tailings Inorganic Sample Results
Concentrations in mg/kg

Sample ID: Case #: Traffic Report #: Location: Location Description:	2352703 24008 MHCQ96 RA-WSO-01 Soil sample from abandoned cyanide leach pits along the Dolores River	2352704 24008 MHCQ97 RA-WSO-02 Soil sample from abandoned cyanide leach pits along the Dolores River	2350420 24008 MHDD89 RA-WSO-03 Tailings piles along Silver Creek	2350426 24008 MHDD95 RA-WSO-04 Tailings piles along Silver Creek	2350407 24008 MHDD76 RA-WSO-05 Tailings pile at confluence of Silver Creek and the Dolores River	2350405 24008 MHDD74 RA-WSO-06 Tailings pile along the Dolores River south of Rico	2350406 24008 MHDD75 RA-WSO-07 Tailings along the Dolores River one mile south of Rico	2353404 24008 MHDD35 RA-WSO-08 Opportunity soil sample from soil in the vicinity of fuel tank at the mill site.
Aluminum (Al)	15200 J	8210 J	2770 J	11800 J	9360 J	425 J	6210 J	1270 J
Antimony (Sb)	[7.6]	0.93 UJ	[5.2]	[7.8]	0.66 UJ	1.7 J	[4.8]	14.7
Arsenic (As)	32.1 J	16.7 J	139 J	43.5 J	9.1 J	137 J	43.5 J	343
Barium (Ba)	182	[55.6]	[42.8]	747	55.6	[39.4]	60.3	[20.8]
Beryllium (Be)	1.5	6.0	2.8	1.5	1.2	[0.58]	0.23 U	0.21 U
Cadmium (Cd)	0.25 UJ	68.7	0.24 UJ	19.2	79.1	32.7	4.4	52.5
Calcium (Ca)	4120 J	135000 J	66800 J	54500 J	65900 J	62000 J	9090 J	17200 J
Chromium (Cr)	25.3	5.0	11.6	17.9	13.0	[1.6]	9.3	4.2
Cobalt (Co)	[12.4]	[13.0]	[2.9]	13.7	[10.4]	[2.5]	[1.1]	11.5
Copper (Cu)	233	1070	372	324	215	565	191	299 J
Iron (Fe)	81500 J	62300 J	146000 J	39400 J	31900 J	103000 J	37800 J	229000 J
Lead (Pb)	833 J	165 J	5130 J	2170 J	4100 J	13300 J	3610 J	9450 J
Magnesium (Mg)	11500	11500	2120	33700	9540	[107]	5830	1300
Manganese (Mn)	2130 J	6010 J	1410 J	12300 J	3980 J	62.3 J	213 J	736 J
Mercury (Hg)	0.16	0.16 U	0.12 U	0.30	0.48	0.21	0.37	0.10 U
Nickel (Ni)	24.7	19.1	[4.5]	27.2	15.7	[2.7]	[4.6]	17.0
Potassium (K)	3290 J	1040 J	3410	2320	1450 J	2180	2420	1740
Selenium (Se)	2.2	0.62 U	5.6	1.1 J	0.44 U	3.5	2.5 J	14.5
Silver (Ag)	28.0	3.3	21.8	127	30.9	45.7	17.7	31.6
Sodium (Na)	38.6 UJ	44.2 UJ	34.7 UJ	34.9 UJ	31.4 UJ	33.9 UJ	33.3 UJ	[931]
Thallium (Tl)	4.7 J	2.7 UJ	4.9	2.2 UJ	1.3 UJ	10.4	1.8 UJ	1.8 J
Vanadium (V)	19.9	[3.4]	23.6	17.5	16.5	[1.8]	12.0	[3.1]
Zinc (Zn)	691 J	14900 J	1850 J	2960 J	10400 J	5450 J	915 J	9870 J
Cyanide (CN)	4.6	0.23 U	4.2	5.4	[0.20]	[0.40]	0.18 U	[0.22]

J The associated numerical value is an estimated quantity because quality control criteria were not met.

U The analyte was not detected at reported concentration (qualified by laboratory software).

UJ The associated numerical value is an estimated quantity because quality control criteria were not met. The analyte was not detected.

[] The associated numerical value was detected below the CRDL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory software). Presence of the compound is reliable.

TABLE 5
Source Soils and Tailings - Organic Sample Results
Concentrations in µg/kg

Sample ID#: Case #: Sample #: Location:	RA-WSO-01 24008 HR-581 Soil sample from upper abandoned cyanide leach pit	RA-WSO-02 24008 HR-582 Soil sample from lower abandoned cyanide leach pit	RA-WSO-03 24008 HR-566 Upper half of tailings pile along Silver Creek at mill	RA-WSO-04 24008 HR-573 Lower half of tailings pile along Silver Creek at mill	RA-WSO-05 24008 HR-922 Tailings at confluence of Silver Creek with Dolores River	RA-WSO-06 24008 HQ-923 Tailings immediately south of Rico along Dolores River	RA-WSO-07 24008 HQ-924 Tailings one mile south of Rico along Dolores River	RA-WSO-08 24008 HQ-929 Opportunity soil sample from vicinity of aboveground tank at mill site
Volatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
Acetone	-	-	-	-	-	-	-	150
Carbon disulfide	-	-	-	-	-	2 J	-	6 J
2-Butanone	-	-	-	-	-	-	-	110
2-Hexanone	-	-	-	-	-	-	-	14 J
Tetrachloroethene	-	-	2 J	-	-	1 J	-	-
Toluene	-	-	-	-	-	-	-	1 J
Semivolatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
Chrysene	-	-	-	31 J	24 J	-	-	-
Fluoranthene	30 J	-	-	64 J	20 J	-	-	-
bis(2-ethylhexyl)phthalate	69 J	110 J	32 J	37 J	250 J	-	-	730 J
Di-n-octylphthalate	-	-	-	-	42 J	-	-	1000 J
Butylbenzylphthalate	-	-	-	-	-	-	-	2100 J
Di-n-butylphthalate	24 J	33 J	25 J	33 J	-	-	-	-
Pyrene	25 J	-	-	55 J	20 J	-	-	-
Phenanthrene	24 J	-	-	39 J	-	-	-	-
Benzo (a) anthracene	-	-	-	25 J	-	-	-	-
Benzo (b) fluoranthene	-	-	-	23 J	-	-	-	-
Benzo (a) pyrene	-	-	-	25 J	-	-	-	-
Phenol	-	-	-	-	-	150 J	-	790 J

TABLE 5
Source Soils and Tailings - Organic Sample Results
Concentrations in µg/kg
(continued)

Sample ID#: Case #: Sample #: Location:	RA-WSO-01 24008 HR-581 Soil sample from upper abandoned cyanide leach pit	RA-WSO-02 24008 HR-582 Soil sample from lower abandoned cyanide leach pit	RA-WSO-03 24008 HR-566 Upper half of tailings pile along Silver Creek at mill	RA-WSO-04 24008 HR-573 Lower half of tailings pile along Silver Creek at mill	RA-WSO-05 24008 HR-922 Tailings at confluence of Silver Creek with Dolores River	RA-WSO-06 24008 HQ-923 Tailings immediately south of Rico along Dolores River	RA-WSO-07 24008 HQ-924 Tailings one mile south of Rico along Dolores River	RA-WSO-08 24008 HQ-929 Opportunity soil sample from vicinity of aboveground tank at mill site
Pesticides	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 8	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 5
Aldrin	-	-	-	-	5.5 NJ	-	-	14 NJ
Endosulfan II	-	-	-	-	-	-	-	21 NJ
Endrin aldehyde	-	-	-	-	-	-	-	9 NJ
Endrin ketone	-	-	-	-	-	-	-	24
Heptachlor	-	-	-	-	-	-	-	2.9 NJ
gamma-Chlordane	-	-	-	-	-	-	-	6.9 NJ
4,4'-DDE	-	-	-	-	-	-	-	19
4,4'-DDD	-	-	-	-	-	-	-	22
Endosulfan sulfate	-	-	-	-	-	-	-	10 NJ
Methoxychlor	-	-	-	-	-	-	-	47 NJ

- || The associated numerical value was detected below the CRQL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory software). Presence of the compound is reliable.
 J The associated numerical value is an estimated quantity because quality control criteria were not met.
 -- The analyte was not detected (qualified by laboratory software).
 () Sample Quantitation Limit (SQL).
 ★ Sample values are \geq to the SQL, $\geq 3x$ background concentrations and $\geq 5x$ all blank concentrations.

TABLE 6
Source Aqueous and Sediment Inorganic Sample Results from Settling Ponds
Concentrations in µg/l or mg/kg

Sample ID: Case #: Traffic Report #: Location: Location Description	2352713 24008 MHDA95 RA-WSE-01 Sediment sample from uppermost settling pond adjacent to the Dolores River (mg/kg)	2352711 24008 MHDA93 RA-WSW-01 Aqueous sample from uppermost settling pond adjacent to the Dolores River (µg/l)	2352707 24008 MHDA89 RA-WSE-02 Sediment sample from lowermost settling pond adjacent to the Dolores River (mg/kg)	2352706 24008 MHDA88 RA-WSW-02 Aqueous sample from lowermost settling pond adjacent to the Dolores River (µg/l)	2352709 24008 MHDA91 RA-WSE-03 Sediment sample from ditch adjacent to upper settling ponds along the Dolores River (mg/kg)	2352708 24008 MHDA90 RA-WSW-03 Aqueous sample from ditch adjacent to upper settling ponds along the Dolores River (µg/l)	2352710 24008 MHDA92 RA-WSW-09 Aqueous sample from spring trickling out into rocks beneath cyanide leach pond (no sediment) (µg/l)
Aluminum (Al)	25500 J	3860 J	8560 J	53.3 J	3620 J	22.1 UJ	234 J
Antimony (Sb)	19.6 UJ	3.0 U	1.8 UJ	3.0 U	0.88 U	3.0 U	3.0 U
Arsenic (As)	49.4	[6.9]	12.9	2.0 U	10.6	2.0 U	2.0 U
Barium (Ba)	[94.5]	[23.9]	[44.7]	[13.1]	[54.2]	[48.1]	[40.3]
Beryllium (Be)	13.6	2.3 UJ	1.3 U	1.0 U	0.48 UJ	1.0 U	1.0 U
Cadmium (Cd)	227	26.4	10.9	[1.9]	[0.32]	1.0 U	1.0 U
Calcium (Ca)	153000 J	215000	13700 J	206000	5700 J	67100	72900
Chromium (Cr)	[15.5]	[1.9]	13.5	1.0 U	4.2	1.0 U	1.0 U
Cobalt (Co)	[40.5]	[5.2]	[12.5]	1.0 U	[4.4]	1.0 U	1.0 U
Copper (Cu)	4250 J	453	69.2 J	[4.2]	12.8 J	4.0 U	[4.9]
Iron (Fe)	195000 J	28500	19800 J	297	12300 J	369	537
Lead (Pb)	838 J	172	137 J	1.0 U	19.0 J	1.0 U	44.7
Magnesium (Mg)	[8470]	19800	7530	20200	2290	8750	9000
Manganese (Mn)	18600 J	2950	3900 J	820	483 J	334	45.4
Mercury (Hg)	1.2 U	0.20 U	0.13 U	0.20 U	0.15 U	0.20 U	0.20 U
Nickel (Ni)	[63.7]	[10.0]	20.2	[2.4]	[8.2]	1.0 U	1.0 U
Potassium (K)	[8050]	5050	1660	[4830]	[1240]	[3230]	2380 J
Selenium (Se)	4.8 U	2.0 U	0.54 U	2.0 U	0.59 U	2.0 U	2.0 U
Silver (Ag)	[8.0]	[1.2]	[2.3]	1.0 U	0.29 U	1.0 U	1.0 U
Sodium (Na)	2480 UJ	9010	38.0 U	9110	75.8 UJ	[1700]	[1880]
Thallium (Tl)	4.8 U	[4.3]	0.54 U	[3.4]	0.59 U	2.2 UJ	[2.8]
Vanadium (V)	[9.0]	[1.5]	[10.5]	1.0 U	[10.1]	1.0 U	1.0 U
Zinc (Zn)	43900 J	5660	1300 J	351	79.3 J	27.2 UJ	49.2
Cyanide (CN)	[3.1]	3.0 U	0.20 U	3.0 U	0.22 U	3.0 UJ	3.0 U

J The associated numerical value is an estimated quantity because quality control criteria were not met.
U The analyte was not detected at reported concentration (qualified by laboratory software).
UJ The associated numerical value is an estimated quantity because quality control criteria were not met. The analyte was not detected.
[] The associated numerical value was detected below the CRDL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory software). Presence of the compound is reliable.

TABLE 7
Source Aqueous and Sediment from Settling Ponds - Organic Sample Results
 Concentrations in $\mu\text{g/l}$ (surface water) and $\mu\text{g/kg}$ (sediment)

Sample ID#: Case #: Sample #: Location:	RA-WSW-01 24008 HR-479 Aqueous sample from uppermost settling pond adjacent to the Dolores River	RA-WSE-01 24008 HR-481 Sediment sample from uppermost settling pond adjacent to the Dolores River	RA-WSW-02 24008 HR-584 Aqueous sample from lowermost settling pond adjacent to the Dolores River	RA-WSE-02 24008 HR-474 Sediment sample from lowermost settling pond adjacent to the Dolores River	RA-WSW-03 24008 HR-475 Aqueous sample from ditch adjacent to upper settling ponds along the Dolores River	RA-WSE-03 24008 HR-476 Sediment sample from ditch adjacent to upper settling ponds along the Dolores River	RA-WSW-09 24008 HR-477 Aqueous sample from spring trickling out into rocks from beneath cyanide leach pad (NO SEDIMENT)
Volatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
Acetone	6 J	-	-	-	-	-	-
Semivolatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
Bis(2-Ethylhexyl) Phthalate	-	170 J	-	23 J	-	-	-
Di-n- Butylphthalate	-	240 J	-	21 J	-	30 J	-
Pesticides	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
Aldrin	-	-	-	-	-	0.32 NJ	-

J The associated numerical value is an estimated quantity because the compounds were detected below the method detection limit.
 - The analyte was not detected above the method detection limit.

TABLE 8
Source Groundwater - Inorganic Sample Results
Concentrations in µg/l

Sample ID: Case #: Traffic Report #: Sample Location: Location Description:		2352712 24008 MHDA94 RA-WGW-01 Source sample from the outfall of the St. Louis Tunnel	2352705 24008 MHCQ98 RA-WGW-02 Surface water sample from the geothermal spring adjacent to the settling pond
Aluminum	(Al)	1660	9.4 U
Antimony	(Sb)	3.0 U	3.0 U
Arsenic	(As)	[4.3]	33.9
Barium	(Ba)	[21.1]	[40.8]
Beryllium	(Be)	1.7 UJ	5.3
Cadmium	(Cd)	20.1	1.0 U
Calcium	(Ca)	262000	615000
Chromium	(Cr)	1.0 U	1.0 U
Cobalt	(Co)	[3.6]	1.0 U
Copper	(Cu)	215	1.0 U
Iron	(Fe)	15200	6680
Lead	(Pb)	21.3	1.0 U
Magnesium	(Mg)	21000	89500
Manganese	(Mn)	2770	1070
Mercury	(Hg)	0.20 U	0.20 U
Nickel	(Ni)	[7.3]	2.7 J
Potassium	(K)	[4860]	26000
Selenium	(Se)	2.0 U	2.0 U
Silver	(Ag)	1.0 U	1.0 U
Sodium	(Na)	8930	64700
Thallium	(Tl)	2.0 U	5.0 J
Vanadium	(V)	1.0 U	1.0 U
Zinc	(Zn)	4100	77.9
Cyanide	(CN)	3.0 U	3.0 U

J The associated numerical value is an estimated quantity because quality control criteria were not met.

U The analyte was not detected at reported concentration (qualified by laboratory software).

UJ The associated numerical value is an estimated quantity because quality control criteria were not met. The analyte was not detected.

{ The associated numerical value was detected below the CRDL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory software). Presence of the compound is reliable.

TABLE 9
Source Groundwater Organic Sample Results
Concentrations in µg/l

Sample ID#: Case #: Sample #: Location:	RA-WGW-01 24008 HR-480 Source Sample from St. Louis Tunnel Outfall	RA-WGW-02 24008 HR-583 Water Sample from Geothermal Spring adjacent to settling pond
Volatile Organic Compounds	Dilution: 1	Dilution: 1
-	-	-
Semivolatile Organic Compounds	Dilution: 1	Dilution: 1
-	-	-
Pesticides	Dilution: 1	Dilution: -- 1
-	-	-

- (I) The associated numerical value was detected below the CRQL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory software). Presence of the compound is reliable.
- J The associated numerical value is an estimated quantity because quality control criteria were not met.
- The analyte was not detected (qualified by laboratory software).
- () Sample Quantitation Limit (SQL).
- ★ Sample values are ≥ to the SQL, ≥ 3x background concentrations and ≥ 5x all blank concentrations.

TABLE 10
Groundwater Inorganic Sample Results
Concentrations in µg/l

Sample ID:	2353401	2353407
Case #:	24008	24008
Traffic Report #:	MHDA99	MHDD36
Sample Location:	RA-GW-01	RA-GW-01
	(Total metals.)	(Dissolved metals.)
Location Description:	Background Groundwater Sample from Ugradient Well in the Dolores River Valley.	Background Groundwater Sample from Ugradient Well in the Dolores River Valley.
Aluminum	8.0 U	8.0 U
Antimony	3.0 U	3.0 U
Arsenic	2.0 U	2.0 U
Barium	[32.8]	[32.3]
Beryllium	1.0 U	1.0 U
Cadmium	1.0 U	1.0 U
Calcium	75900	76600
Chromium	1.0 U	1.0 U
Cobalt	1.0 U	[1.1]
Copper	4.0 U	4.0 U
Iron	10.0 U	10.0 U
Lead	1.0 U	1.0 U
Magnesium	5950	5750
Manganese	2.0 U	[2.3]
Mercury	0.20 U	0.20 U
Nickel	1.0 U	1.0 U
Potassium	[3360]	[4680]
Selenium	2.0 U	2.0 U
Silver	1.0 U	1.0 U
Sodium	[1350]	[2250]
Thallium	2.8 UJ	2.0 U
Vanadium	1.0 U	1.0 U
Zinc	73.3	76.2
Cyanide	3.0 U	NR

- J The associated numerical value is an estimated quantity because Quality Control criteria were not met.
- UJ The reported amount is estimated because Quality Control criteria were not met. Element was not detected.
- U The analyte was not detected at reported concentration. (Qualified by laboratory software.)
- [] The associated numerical value was detected below the CRQL, but greater than the method detection limit and is therefore an estimate. Presence of the compound is reliable. (Qualified by laboratory software.)
- NR No result reported by laboratory.

TABLE 11
Groundwater Organic Sample Results
Concentrations in µg/l

Sample ID#: Case #: Sample #: Location:	RA-GW-01 24008 HQ925 Background well at Rico Ranger Station
Volatile Organic Compounds	Dilution: 1
Semivolatile Organic Compounds	Dilution: 1
Pesticides	Dilution: 1

- [] The associated numerical value was detected below the CRQL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory software). Presence of the compound is reliable.
- J The associated numerical value is an estimated quantity because quality control criteria were not met.
- The analyte was not detected (qualified by laboratory software).
- () Sample Quantitation Limit (SQL).
- ★ Sample values are \geq to the SQL, $\geq 3x$ background concentrations and $\geq 5x$ all blank concentrations.

TABLE 12
Residential Soil Inorganic Sample Results
Concentrations in mg/kg

Sample ID: Case #: Traffic Report #: Sample Location: Location Description:	2350423 24008 MHDD92 RA-SO-01 Sample from off-site location outside of site influences.	2350430 24008 MHDD99 RA-SO-02 Opportunity soil sample from residential property in Rico	2352715 24008 MHDA97 RA-SO-03 Opportunity soil sample from residential property in Rico	2352716 24008 MHDA98 RA-SO-04 Opportunity soil sample from residential property in Rico	2353402 24008 MHDB00 RA-SO-05 Opportunity soil sample from residential property in Rico	2353403 24008 MHDD34 RA-SO-06 Opportunity soil sample from residential property in Rico
Aluminum	8950 J	7900 J	7750 J	9250 J	3230 J	8700 J
Antimony	0.70 U	0.68 U	1.0 UJ	★ 3.1 UJ (0.73)	[0.80]	[1.8]
Arsenic	9.7 J	18.2 J	11.8	14.8	5.7	★ 21.4 (0.48)
Barium	143	125	205	167	74.5	176
Beryllium	[0.55]	[0.75]	0.72 UJ	1.4	[0.30]	[0.92]
Cadmium	4.7	★ 41.8 (0.23)	5.7	3.6	[0.57]	11.7
Calcium	4700 J	3770 J	8330 J	4040 J	2550 J	4260 J
Chromium	13.5	10.1	9.5	9.5	3.2	10.7
Cobalt	[6.4]	[10.6]	[5.5]	[4.5]	[3.1]	[11.1]
Copper	30.2	★ 331 (0.23)	37.4 J	★ 97.2 J (0.97)	17.9 J	★ 92.8 J (0.97)
Iron	15600 J	25900 J	13000 J	14600 J	7870 J	24800 J
Lead	221 J	★ 2620 J	156 J	★ 673 J (0.24)	67.5 J	433 J
Magnesium	4160	4480	2840	1980	1570	4810
Manganese	623 J	★ 2030 J (0.46)	717 J	597 J	399 J	★ 3090 J (0.48)
Mercury	0.12 U	★ 1.7 (0.11)	0.20	★ 0.89 (0.12)	0.20	0.12 U
Nickel	9.8	10.3	[7.8]	[8.1]	[7.5]	13.3
Potassium	2280	1880	2240	1520	[804]	1470
Selenium	0.47 U	0.66 J	[1.2]	1.3	0.44 U	0.48 U
Silver	[1.0]	★ 9.4 (0.23)	[1.1]	★ 5.2 (0.24)	0.22 U	[1.1]
Sodium	33.3 U	32.4 UJ	96.3 UJ	★ 106 UJ (34.34)	[69.8]	[66.4]
Thallium	0.66 UJ	1.5 UJ	0.47 U	0.48 U	0.44 U	0.48 U
Vanadium	21.2	15.3	14.8	18.5	[9.9]	18.7
Zinc	499 J	★ 5180 J (1.14)	724 J	528 J	109 J	★ 1720 J (1.21)
Cyanide	[0.49]	[0.24]	[0.51]	0.98	0.89	[0.26]

J The associated numerical value is an estimated quantity because Quality Control criteria were not met.
UJ The reported amount is estimated because Quality Control criteria were not met. Element was not detected.
U The analyte was not detected at reported concentration. (Qualified by laboratory software.)
[] The associated numerical value was detected below the CRQL, but greater than the method detection limit and is therefore an estimate. Presence of the compound is reliable. (Qualified by laboratory software.)
() Sample Quantitation Limit (SQL)
★ Sample values are ≥ to the SQL, ≥ 3x background concentration and ≥ 5x all blank concentrations.

TABLE 13
Residential Soil Organic Sample Results
Concentrations in µg/kg

Sample ID#: Case #: Sample #: Location:	RA-SO-01 24008 HR569 Background residential soil sample	RA-SO-02 24008 HR578 Residential Soil	RA-SO-03 24008 HR484 Residential Soil	RA-SO-04 24008 HR485 Residential Soil	RA-SO-05 24008 HQ926 Residential Soil	RA-SO-06 24008 HQ927 Residential Soil
Volatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
	-	-	-	-	-	-
Semivolatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
Butylbenzylphthalate	-	-	-	-	-	28 J
bis (2-Ethylhexyl) Phthalate	50 J	68 J	-	23 J	30 J	30 J
Phenanthrene	-	64 J (388.24)	-	85 J (412.5)	24 J (362.64)	-
Anthracene	-	40 J (388.24)	-	-	-	-
Di-n-Butylphthalate	-	58 J (388.24)	-	-	31 J (362.64)	36 J (407.41)
Fluoranthene	-	★ 730 (388.24)	-	100 J (412.5)	50 J (362.64)	-
Pyrene	-	★ 750 (388.24)	-	86 J (412.5)	41 J (362.64)	-
Benzo (a) Anthracene	-	★ 550 (388.24)	-	94 J (412.5)	35 J (362.64)	-
Chrysene	-	★ 550 (388.24)	-	95 J (412.5)	39 J (362.64)	-
Benzo (b) Fluoranthene	-	★ 500 (388.24)	-	85 J (412.5)	33 J (362.64)	-
Benzo (k) Fluoranthene	-	★ 390 (388.24)	-	97 J (412.5)	43 J (362.64)	-
Benzo (a) Pyrene	-	★ 530 (388.24)	-	74 J (412.5)	33 J (362.64)	-
Indeno (1,2,3-cd) Pyrene	-	280 J (388.24)	-	65 J (412.5)	29 J (362.64)	-
Dibenz (a,h) Anthracene	-	150 J (388.24)	-	34 J (412.5)	-	-
Benzo (g,h,i) Perlene	-	330 J (388.24)	-	79 J (412.5)	32 J (362.64)	-
Naphthalene	-	-	-	31 J (412.5)	-	-
2 Methyl naphthalene	-	-	-	46 J (412.5)	-	-

TABLE 13
Residential Soil Organic Sample Results
Concentrations in µg/kg
(continued)

Sample ID#: Case #: Sample #: Location:	RA-SO-01 24008 HR569 Background residential soil sample	RA-SO-02 24008 HR578 Residential Soil	RA-SO-03 24008 HR484 Residential Soil	RA-SO-04 24008 HR485 Residential Soil	RA-SO-05 24008 HQ926 Residential Soil	RA-SO-06 24008 HQ927 Residential Soil
Pesticides	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
Endosulfan sulfate	.48 NJ	.76 NJ	-	-	.77 NJ	-
4,4'-DDD	.52 NJ	.52 NJ	-	-	-	-
Heptachlor	-	.21 NJ (2.00)	-	-	.88 J (1.87)	-
Aldrin	-	1.6 NJ (2.00)	.40 NJ (2.1)	2.2 J (8.5)	.67 NJ (1.87)	.3 NJ (2.10)
Heptachlor Epoxide	-	★ 3.2 NJ (2.00)	.29 NJ (2.1)	4.2 N (8.5)	1.5 NJ (1.87)	-
Endosulfan I	-	★ 2.2 NJ (2.00)	-	-	.31 NJ (1.87)	-
4,4'-DDE	-	★ 4.4 NJ (3.88)	.43 NJ (4.07)	-	1.2 NJ (1.87)	-
Endrin	-	1.8 NJ (3.88)	-	-	-	-
4,4'-DDT	-	.82 NJ (3.88)	1.1 NJ (4.07)	-	3.7 NJ	-
Endrin ketone	-	★ 3.9 NJ (3.88)	-	-	-	-
alpha-Chlordane	-	★ 2.1 NJ (2.00)	-	-	.29 NJ (1.87)	-
gamma-Chlordane	-	.33 NJ (2.00)	-	-	-	-
delta-BHC	-	-	-	-	.17 NJ (1.87)	-

- [] The associated numerical value was detected below the CRQL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory software). Presence of the compound is reliable.
 J The associated numerical value is an estimated quantity because quality control criteria were not met.
 -- The analyte was not detected (qualified by laboratory software).
 () Sample Quantitation Limit (SQL).
 ★ Sample values are ≥ to the SQL, ≥ 3x background concentrations and ≥ 5x all blank concentrations.
 NJ Estimated value of a tentatively identified compound. Pesticide compounds which were qualified "J" for surrogate recovery results and the percent difference (%D) between the dual column quantitation of several positive results was greater than 25%, were qualified "NJ."

TABLE 14

Aqueous from Silver Creek - Inorganic Sample Results
 Concentrations in mg/l

Sediment from Silver Creek - Inorganic Sample Results
 Concentrations in mg/kg

Sample ID: Case #: Traffic Report: Sample Location:	RA-SW-05 24008 MHDD96 Silver Creek Background	RA-SW-06 24008 MHDD87 Silver Creek below tailings piles	RA-SW-07 24008 MHDD82 Silver Creek, just before confluence with Dolores River
Aluminum	16.0 UJ	94.2 UJ (0.2)	20.6 UJ
Antimony	3.0 U	3.0 U	3.0 U
Arsenic	2.0 U	2.0 U	2.0 U
Barium	[123]	[95.8]	[87.9]
Beryllium	1.0 U	1.0 U	1.0 U
Cadmium	1.0 U	[1.8]	[2.1]
Calcium	33800	54700	69100
Chromium	1.0 U	1.0 U	1.0 U
Cobalt	1.0 U	1.0 U	1.0 U
Copper	1.0 U	[2.2]	[1.8]
Iron	10.0 U	★ 919 (0.1)	★ 159 (0.1)
Lead	1.0 U	3.9 (0.003)	[1.1]
Magnesium	[3380]	7120	7890
Manganese	1.0 U	★ 484 (0.015)	★ 192 (0.015)
Mercury	0.20 U	0.20 U	0.20 U
Nickel	1.0 U	[1.0]	[1.0]
Potassium	834 U	[2100]	[3290] (0.5)
Selenium	2.0 U	2.0 U	2.0 U
Silver	1.0 U	1.0 U	1.0 U
Sodium	1500 UJ	1560 UJ	1760 UJ
Thallium	2.0 U	2.0 U	2.0 U
Vanadium	1.0 U	1.0 U	1.0 U
Zinc	4.0 UJ	★ 1060 (0.02)	★ 720 (0.02)
Cyanide	3.0 U	3.0 U	3.0 U

Sample ID: Case #: Traffic Report: Sample Location:	RA-SE-05 24008 MHDD97 Silver Creek background	RA-SE-06 24008 MHDD88 Silver Creek below tailings pile	RA-SE-07 24008 MHDD83 Silver Creek, just before confluence with Dolores River
Aluminum	3820 J	★ 17300 J (84.62)	5500 J
Antimony	1.1 U	7.7 UJ	0.71 U
Arsenic	6.9 J	★ 52.6 J (5.13)	★ 22.0 J (0.47)
Barium	133	[58.0]	76.8
Beryllium	[0.45]	★ 16.9 (2.56)	[0.67]
Cadmium	0.38 U	★ 17.8 J (2.56)	6.4
Calcium	3660 J	★ 16900 J (12.82)	3810 J
Chromium	6.3	7.4 UJ	9.1
Cobalt	[3.3]	[6.1]	[5.3]
Copper	[6.7]	★ 123 (2.56)	★ 255 (0.24)
Iron	8580 J	★ 225000 J (23.05)	★ 30400 J (2.13)
Lead	13.2 J	★ 2000 J (2.56)	★ 1540 J (0.24)
Magnesium	2280	[1360]	4910
Manganese	343 J	★ 3060 J (5.0)	★ 1580 J (0.47)
Mercury	0.19 U	1.3 U	0.12 U
Nickel	[5.6]	★ 22.7 J (2.56)	9.6
Potassium	[1720]	3450 J	1280 J
Selenium	0.76 U	★ 5.1 (5.13)	0.77 J
Silver	0.38 U	★ 3.9 J (2.56)	★ [2.3] (0.24)
Sodium	165 UJ	364 UJ	33.5 UJ
Thallium	0.76 U	11.9 UJ	1.5 UJ
Vanadium	[10.8]	[5.7]	11.9
Zinc	30.8 J	★ 48300 J (12.5)	★ 2010 J (1.18)
Cyanide	0.28 U	★ [2.2] (0.002)	0.18 U

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 [] The associated numerical value was detected below the CRQL, but greater than the method detection limit and is therefore an estimate. Presence of the compound is reliable. (Qualified by laboratory software.)
 () Sample Quantitation Limit (SQL).
 ★ Sample values are ≥ to the SQL, ≥ 3x background concentration and ≥ 5x all blank concentrations.

TABLE 15

Aqueous from Silver Creek - Organic Sample Results
Concentrations in µg/l

Sample ID#: Case #: Sample #: Location:	RA-SW-05 24008 HR-574 Silver Creek Background	RA-SW-06 24008 HR-564 Silver Creek below tailings piles	RA-SW-07 24008 HR-558 Silver Creek just before confluence with Dolores River
Volatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1
Tetrachlorethene			
Semivolatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1
Di-n-Butylphthalate		-	
Bis(2-Ethylhexyl) Phthalate		-	
Pesticides	Dilution: 1	Dilution: 1	Dilution: 1
	-	-	-

Sediment from Silver Creek - Organic Sample Results
Concentrations in mg/kg

RA-SE-05 24008 HR-575 Silver Creek Background	RA-SE-06 24008 HR-564 Silver Creek below tailings piles	RA-SE-07 24008 HR-558 Silver Creek just before confluence with Dolores River
Dilution: 1	Dilution: 1	Dilution: 1
-	12 J (111)	2 J (11.76)
Dilution: 1	Dilution: 1	Dilution: 1
31 J	190 J (3666)	-
62 J (485)	290 J (3666)	-
Dilution: 1	Dilution: 1	Dilution: 1
-	-	-

- NJ Estimated value of a tentatively identified compound. SVOC compounds were qualified "NJ" because the sample spectra were not included with the data package. Pesticide compounds which were qualified "J" for surrogate recovery results and the percent difference (%D) between the dual column quantitation of several positive results was greater than 25%, were qualified "NJ."
- J The associated numerical value is an estimated quantity because quality control criteria were not met.

TABLE 16
Aqueous from the Dolores River - Inorganic Sample Results
Concentrations in µg/l

Sample ID: Case #: Traffic Report #: Sample Location: Location Description:	2352701 24008 MHCQ94 RA-SW-01 Background on Dolores River	2350424 24008 MHDD93 RA-SW-02 Adjacent to settling ponds on the Dolores River	2350421 24008 MHDD90 RA-SW-03 Confluence of drainage from settling ponds and Dolores River	2350416 24008 MHDD85 RA-SW-04 Confluence of Silver Creek and the Dolores River	2350409 24008 MHDD78 RA-SW-08 1.7 miles downstream of outfall 002 on the Dolores River	2350412 24008 MHDD81 RA-SW-09 1.9 miles downstream of outfall 002 on the Dolores River	2350401 24008 MHDD70 RA-SW-10 2.8 miles downstream of outfall 002 on the Dolores River	2350402 24008 MHDD71 RA-SW-11 5.8 miles downstream of outfall 002 on the Dolores River	2350408 24008 MHDD77 RA-SW-27 Duplicate of RA-SW-11
Aluminum	46.5 UJ	★ 492 J (0.2)	56.3 UJ	49.5 UJ	★ 349 (0.2)	[42.1]	[61.2]	[131]	[35.1]
Antimony	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Arsenic	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Barium	[61.2]	[64.5]	[38.4]	[57.9]	[58.5]	[58.0]	[66.7]	[73.8]	[73.7]
Beryllium	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	1.0 U	1.0 U	[1.0]	[1.1]	[1.1]	1.0 U	1.0 U	1.0 U	1.0 U
Calcium	34800	39100	★ 118000 (5.0)	51000	51700	52400	50900	51700	51800
Chromium	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cobalt	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Copper	1.0 U	[1.8]	[3.0] (0.025)	1.0 U	★ [8.0] (0.025)	[1.1]	[1.1]	[1.3]	[1.2]
Iron	24.2 J	★ 772 (0.1)	★ 242 (0.1)	★ 82.8 J (0.1)	★ 1310 (0.1)	★ 124 J (0.1)	★ 114 J (0.1)	★ 152 (0.1)	★ 86.8 J (0.1)
Lead	1.0 U	[1.5]	1.0 U	11.3	[1.3]	1.0 U	3.3 (0.003)	1.0 U	1.0 U
Magnesium	5320	5770	12200	6550	7430	6940	6760	6700	6840
Manganese	17.7	★ 103 (0.015)	★ 450 (0.015)	★ 126 (0.015)	★ 359 (0.015)	★ 137 (0.015)	★ 113 (0.015)	★ 80.5 (0.015)	★ 79.7 (0.015)
Mercury	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	1.0 U	1.0 U	[1.4]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Potassium	3120 J	[3820]	[3130]	834 U	[3220]	[3060]	[3360]	[2520]	[2310]
Selenium	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Silver	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Sodium	[1950]	2070	5140	[2270]	[2740]	[2730]	[2650]	[2590]	[2740]
Thallium	2.0 U	2.0 U	[2.3]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vanadium	1.0 U	[1.4]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Zinc	4.5 UJ	10.0 UJ	★ 198 (0.03)	★ 85.9 (0.02)	★ 307 (0.02)	★ 81.0 (0.02)	★ 73.3 (0.02)	★ 99.2 (0.02)	★ 62.5 (0.02)
Cyanide	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 UJ	3.0 U	3.0 U

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() Sample Quantitation Limit (SQL)
★ Sample values are ≥ to the SQL, ≥ 3x background concentration and ≥ 5x all blank concentrations.

TABLE 17
Dolores River: Aqueous - Organic Sample Results
Concentrations in µg/l

Sample ID#: Case #: Sample #: Location:	RA-SW-01 24008 HR-579 Background	RA-SW-02 24008 HR-570 Adjacent to settling ponds	RA-SW-03 24008 HR-567 Below outfall from settling ponds	RA-SW-04 24008 HR-561 Below confluence with Silver Creek	RA-SW-08 24008 HR-555 1.7 mi. below settling ponds outfall	RA-SW-09 24008 HR-554 1.9 mi. below settling ponds outfall	RA-SW-10 24008 HR-549 2.8 mi. below settling ponds outfall	RA-SW-11 24008 HR-551 5.3 mi. below settling ponds outfall
Volatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
Carbon Disulfide	-	-	-	-	12	-	-	-
Semivolatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
	-	-	-	-	-	-	-	-
Pesticides	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
	-	-	-	-	-	-	-	-

- NJ** Estimated value of a tentatively identified compound. SVOC compounds were qualified "NJ" because the sample spectra were not included with the data package. Pesticide compounds which were qualified "J" for surrogate recovery results and the percent difference (%D) between the dual column quantitation of several positive results was greater than 25%, were qualified "NJ."
- J** The associated numerical value is an estimated quantity because quality control criteria were not met.

TABLE 18
Sediment from Dolores River - Inorganic Sample Results
Concentrations in mg/kg

Sample ID: Case #: Traffic Report #: Sample Location: Location Description:	2352702 24008 MHCQ95 RA-SE-01 Upstream of site influences on the Dolores River	2350425 24008 MHDD94 RA-SE-02 Adjacent to tailings piles on the Dolores River	2350422 24008 MHDD91 RA-SE-03 Confluence of drainage from settling ponds and the Dolores River	2350417 24008 MHDD86 RA-SE-04 Confluence of Silver Creek and the Dolores River	2350410 24008 MHDD79 RA-SE-08 1.7 miles downstream of outfall 002 on the Dolores River	2350411 24008 MHDD80 RA-SE-09 1.9 miles downstream of outfall 002 on the Dolores River	2350404 24008 MHDD73 RA-SE-10 2.8 miles downstream of outfall 002 on the Dolores River	2350403 24008 MHDD72 RA-SE-11 5.3 miles downstream of outfall 002 on the Dolores River
Aluminum	4630 J	6300 J	2650 J	3220 J	6240 J	7020 J	4480 J	3080 J
Antimony	0.85 U	0.81 U	0.78 U	1.1 U	{1.3}	1.0 U	1.3 U	0.91 U
Arsenic	25.1 J	9.8 J	6.2 J	9.2 J	16.5 J	18.2 J	10.5 J	6.4 J
Barium	79.3	72.6	52.9	{43.0}	{47.8}	117	90.8	{60.2}
Beryllium	0.45 UJ	{0.55}	{0.51}	0.37 U	{0.89}	{0.76}	{0.58}	{0.40}
Cadmium	{0.62}	0.27 U	{0.67}	{0.62}	{1.4}	4.2	{1.1}	{1.2}
Calcium	26900 J	5130 J	5490 J	1710 J	2460 J	15500 J	23100 J	13900 J
Chromium	5.2	8.2	2.8	{3.7}	7.5	9.2	6.3	4.3
Cobalt	{5.0}	{5.4}	{5.2}	{4.8}	{4.9}	{8.9}	{5.0}	{3.4}
Copper	12.1	35.6	8.1	25.9	★ 112 (0.28)	★ 66.5 (0.34)	27.3	20.2
Iron	15500 J	15200 J	7700 J	10200 J	25200 J	22200 J	14900 J	9350 J
Lead	69.8 J	28.4 J	14.5 J	192 J	★ 223 J (0.28)	★ 277 J (0.34)	65.2 J	52.1 J
Magnesium	3310	3680	2090	{1840}	3760	6460	6780	2980
Manganese	400 J	504 J	966 J	821 J	596 J	★ 1210 J (0.67)	322 J	478 J
Mercury	0.14 U	0.14 U	0.13 U	0.19 U	0.14 U	0.17 U	0.21 U	0.15 U
Nickel	{8.9}	11.2	{7.6}	{6.3}	{9.7}	16.1	{14.8}	{7.4}
Potassium	1670	{1330}	{755}	{1400}	1540	2490	{1660}	{1330}
Selenium	0.56 U	0.66 J	0.52 U	0.74 U	0.56 U	0.67 U	{1.3}	0.61 U
Silver	0.28 U	{0.28}	0.26 U	0.37 U	{0.60}	{0.98} (0.34)	0.43 U	0.30 U
Sodium	74.1 UJ	198 UJ	98.5 UJ	204 UJ	73.1 UJ	47.7 U	116 UJ	71.1 UJ
Thallium	1.1 UJ	0.68 UJ	0.52 U	0.74 U	1.3 UJ	1.8 UJ	1.4 UJ	0.70 UJ
Vanadium	{12.4}	15.0	{7.2}	{9.1}	14.5	19.7	{12.9}	{8.6}
Zinc	133 J	107 J	131 J	103 J	★ 429 J (1.41)	★ 722 J (1.68)	232 J	247 J
Cyanide	0.21 U	0.20 U	0.19 U	0.28 U	0.21 U	0.25 U	0.32 U	0.23 U

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 { } The associated numerical value was detected below the CRQL, but greater than the method detection limit and is therefore an estimate. Presence of the compound is reliable. (Qualified by laboratory software.)
 () Sample Quantitation Limit (SQL).
 ★ Sample value are \geq to the SQL, $\geq 3x$ the background concentration and $\geq 5x$ all blank concentrations.

TABLE 19
Sediment from Dolores River - Organic Sample Results
Concentrations in µg/kg

Sample ID#: Case #: Sample #: Location:	RA-SE-01 24008 HR-580 Dolores River Background	RA-SE-02 24008 HR-571 Dolores River adjacent to settling ponds	RA-SE-03 24008 HR-568 Dolores River below outfall from settling ponds	RA-SE-04 24008 HR-562 Dolores River below confluence with Silver Creek	RA-SE-08 24008 HR-556 Dolores River 1.7 mi. below settling ponds outfall	RA-SE-09 24008 HR-557 Dolores River 1.9 mi. below settling ponds outfall	RA-SE-10 24008 HR-550 Dolores River 2.8 mi. below settling ponds outfall	RA-SE-11 24008 HR-552 Dolores River 5.3 mi. below settling ponds outfall
Volatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 0.2
Tetrachlorethene	-	-	-	-	2 J (12.50)	-	-	-
Acetone	-	-	-	-	-	-	-	★ 12 UJ (2.41)
Semivolatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 2
Di-n-Butylphthalate	27 J	-	-	-	-	-	-	-
Bis(2-Ethylhexyl) Phthalate	-	-	-	27 J (402)	28 J (412)	-	120 J (532)	36 J (397)
4-Methylphenol	-	-	-	-	-	-	680 (532)	62 J (397)
Pesticides	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
	-	-	-	-	-	-	-	-

- J The associated numerical value is an estimated quantity because required concentrations were below the detection limits.
 - The analyte was not detected (qualified by laboratory software).
 () Sample Quantitation Limit (SQL)
 ★ Sample values are ≥ to the SQL, ≥ 3 x background concentration and ≥ 5 x all blank concentrations.

TABLE 20
Quality Assurance/Quality Control - Inorganic Sample Results
Concentrations in µg/l

Sample ID: Case #: Traffic Report #: Sample Location: Location Description:	2350415 24008 MHDD84 RA-SW-22 Rinsate blank sample	2350429 24008 MHDD98 RA-SW-23 Rinsate blank sample	2352714 24008 MHDA96 RA-SW-24 Rinsate blank sample
Aluminum	8.0 U	16.0 UJ	41.7 UJ
Antimony	3.0 U	3.0 U	[4.4]
Arsenic	2.0 U	2.0 U	2.0 U
Barium	1.0 U	1.0 U	[1.0]
Beryllium	1.0 U	1.0 U	[1.0]
Cadmium	1.0 U	1.0 U	1.0 U
Calcium	127 U	127 U	[128]
Chromium	1.0 U	1.0 U	1.0 U
Cobalt	1.0 U	1.0 U	1.0 U
Copper	1.0 U	1.0 U	1.0 U
Iron	10.0 U	10.0 U	10.0 U
Lead	1.0 U	1.0 U	2.7 UJ
Magnesium	39.8 UJ	73.0 UJ	73.0 UJ
Manganese	1.0 U	1.0 U	[1.2]
Mercury	0.20 U	0.20 U	0.20 U
Nickel	1.0 U	1.0 U	1.0 U
Potassium	834 U	834 U	834 U
Selenium	2.0 U	2.0 U	2.0 U
Silver	1.0 U	1.0 U	1.0 U
Sodium	340 UJ	363 UJ	317 UJ
Thallium	2.0 U	2.0 U	2.0 U
Vanadium	1.0 U	1.0 U	1.0 U
Zinc	[2.5]	[6.0]	[6.8]
Cyanide	3.0 U	3.0 U	3.0 U

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TABLE 21
Quality Assurance/Quality Control - Organic Sample Results
Concentrations in µg/l

Sample ID#: Case #: Sample #: Location:	RA-SW-18 24008 HR-563 Trip blank	RA-SW-19 24008 HR-576 Trip blank	RA-SW-20 24008 HR-572 Trip Blank	RA-SW-22 24008 HR-560 Rinsate Blank	RA-SW-23 24008 HR-577 Rinsate Blank	RA-SW-24a 24008 HR-482 Rinsate Blank	RA-SW-24b 24008 HQ-930 Rinsate Blank	RA-SW-91 24008 HR-478 Trip Blank	RA-SW-92 24008 HR-483 Trip Blank	RA-SW-93 24008 HQ-928 Trip Blank
Volatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
Acetone	10 UJ	6 J	6 J	-	20	-	-	-	-	-
Chloroform	33 J	27	29	24	23	25	-	26	28	26 U
Semivolatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
	-	-	-	-	-	-	-	-	-	-
Pesticides	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
	-	-	-	-	-	-	-	-	-	-

J The associated numerical value is an estimated quantity.

APPENDIX A
SAMPLE ACTIVITIES REPORT

SAMPLE ACTIVITIES REPORT
for the
RICO/ARGENTINE MINE AND MILL SITE
RICO, COLORADO
September 11 - 15, 1995

CERCLIS ID # COD980952519

INTRODUCTION

The Field Sampling Plan (FSP) for the Rico/Argentine Mine and Mill site Expanded Site Inspection (ESI) was approved by the U.S. Environmental Protection Agency (EPA) Site Assessment Manager (SAM), Greg Oberley on August 1, 1995. Field activities were conducted during the week of September 11 - 15, 1995 by URS Consultants, Inc. (URS). The field sampling team consisted of Barry Hayhurst (Field Team Leader), Tim Joseph (Health and Safety Coordinator), Rachel Badger (Environmental Scientist), Roger Petrella (Environmental Sampler), Metha Leslie (Environmental Sampler) and Phil Woodcock (Sampling Technician). URS obtained access to sample locations from Wayne Webster, President of Rico Development Corporation and from individual property owners in the town of Rico.

The field team collected 45 samples, gauged the flow of Silver Creek, Scotch Creek and the Dolores River, described and delineated wetlands for approximately one mile along the Dolores River downstream of the confluence with Silver Creek, and measured water quality parameters (pH, temperature and conductivity) at five non-sampling locations.

During the field sampling activities the weather was uniformly mild and sunny. There were no windy days and temperatures ranged between 40° F at the beginning of the day to about 75° F in late afternoon.

The residents of Rico were generally receptive to the EPA investigation of the site. Almost everyone was interested in the activities and were cooperative with the field sampling team. Several Rico residents expressed an interest in obtaining the results of this ESI.

SAMPLING ACTIVITIES

Table 1 and the attached chain-of-custody forms contain the shipment information for all samples collected during the ESI. Figure 1 shows sample locations and Figure 2 shows the locations and results of the water quality samples. Sampling activities included the collection of 45 samples, specifically 14 source, 3 groundwater, 11 stream surface water, 11 stream sediment and 6 residential soil. Additionally, 9 Quality Assurance/Quality Control (QA/QC) samples were collected.

Samples were shipped to RECRA Environmental of Columbia Maryland for the organic analyses and to Southwest Labs of Oklahoma, Broken Arrow, Oklahoma for the inorganic analyses.

SOURCE SAMPLES

Fourteen source samples were collected (eight soil/tailings, three aqueous and three sediment) from tailing piles, settling ponds, leach pits and ditches associated with activities on the Rico/Argentine mine and mill properties. Samples RA-WSO-01 and RA-WSO-02 were collected from the two cyanide leach pits. Samples collected from the numerous tailing piles (samples RA-WSO-3 through RA-WSO-7) were generally fine grained, yellowish to orange material that was probably deposited from running water. Source sample RA-WSO-08 was collected from stained soil surrounding what appeared to be a fuel oil tank at the mill site. This tank could have contained new or used fuel oil. The overflow from the tank had stained soil for approximately 50 feet down gradient in a ditch leading from the tank.

Three aqueous and collocated sediment samples were collected from the area of the settling ponds along the Dolores River. Sample RA-WSW/WSE-01 was collected from the uppermost settling pond and sample RA-WSW/WSE-02 was collected from the lowermost settling pond. Sample RA-WSW/WSE-03 was collected from a ditch that flows between the Dolores River and the upper settling pond and cyanide leach pits.

ADIT SAMPLE

Sample RA-WGW-02 was collected from the St. Louis Tunnel Adit. The water in the ditch leading from the adit outfall was precipitating what appeared to be iron oxides on the ditch bed. Flow rate was not measured at the adit or ditch because the flow was too turbulent to give an accurate reading.

HOT SPRING SAMPLE

Sample RA-WGW-03 was collected from a public use hot spring tub located adjacent to the Dolores River. Water from a hot spring approximately 50 feet northeast of the hot tub is gravity drained to the hot tub via a two inch PVC pipe. The hot tub is stained with what appears to be iron oxides. Flow from the source hot spring is approximately 30-50 gallons per minute and flow diverted into the hot tub is approximately 15 gallons per minute. There is a second hot spring approximately 500 feet northeast of the first hot spring. Both hot springs have almost identical temperature, pH and conductivity suggesting a common source. Flow from the second hot spring is approximately 15 to 20 gallons per minute. Flow from the hot springs drains directly into the lowest settling pond, except for the hot tub which drains directly to the Dolores River.

Hot Springs Water Quality (9-12-95)

	Temperature (°F)	pH	Conductivity (μ S/cm)
Hot Tub Spring	107.9	6.60	7280
2nd Hot Spring	107.3	6.66	7080

GROUNDWATER SAMPLES

Three groundwater samples were collected. Two of the groundwater samples were collected on-site from the St. Louis Tunnel Adit (RA-WGW-02) and from the public use hot spring (RA-WGW-03). The background groundwater sample (RA-GW-01) was collected from the Rico Ranger Station groundwater well located across the Dolores River from the settling ponds. The well is used as a drinking water well by the Rico Ranger Station staff during the summer season and was sampled directly from the tap. No domestic groundwater wells were located in the town of Rico even though inquiries were made at approximately one-third of the town's residences.

RESIDENTIAL SOIL SAMPLES

Six residential soil samples were taken including background sample RA-SO-01. Written permission from property owners was obtained before all samples were collected. Residential soil sample RA-SO-02 was taken from a lot next to an old railroad ore loading station. The surface of the property was littered with ore grade material. All other residential soil samples were collected from yards and gardens because specific locations where tailing had been used as fill or foundation material could not be identified by any of the interviewed residents.

SURFACE WATER SAMPLES

Eleven surface water samples were collected as a part of this ESI. Eight of the surface water samples were collected from the Dolores River and three were collected from Silver Creek. All of the Dolores River samples were collected as planned except for the most downstream sample, RA-SW-11, which was collected at the new Highway 145 bridge over the Dolores River, approximately one-half mile further downstream than specified in the FSP (Figure 1). The river water was clear and the flow was what would be expected for early September.

Three surface water samples were taken from Silver Creek at the locations specified in the FSP. Silver Creek, at sample location RA-SW-06, was noticeably stained with what appeared to be fresh iron oxides. Sample location RA-SW-06 is just downstream of a spring flowing from the base of the tailings pile. The country rock exposed in outcrops along Silver Creek in this area were also stained orange but not as strongly as the creek bed below the spring.

SEDIMENT SAMPLES

Eleven sediment samples were collected as part of the Rico/Argentine ESI. Eight of the sediment samples were collected from the Dolores river as specified in the FSP except for the most downstream sample, RA-SE-11, which was collected at the new State Highway 145 bridge approximately one-half mile further downstream than specified in the FSP (Figure 1). The Dolores River stream bed in the vicinity of Rico is composed largely of boulders and cobbles. Considerable digging between the larger stones was required to collect sand sized sediment. Very little silt or clay sized sediment was encountered in the riverbed sediment.

Three sediment samples were collected from Silver Creek at the locations specified in the FSP. Silver Creek is a swift flowing mountain stream and its streambed is composed largely of boulders and cobbles.

QUALITY ASSURANCE SAMPLES

Nine quality control samples were collected during this ESI. Four rinsate blanks (RA-SW-22 for 9/11/95, RA-SW-23 for 9/12/95, RA-SW-24 for 9/13/95, and RA-SW-25 for 9/14/95) were collected from decontaminated soil/sediment sampling equipment. A separate trip blank was prepared for each day of sampling (RA-SW-18 for 9/11/95, RA-SW-19 for 9/12/95, RA-SW-20 for 9/13/95 and RA-SW-93 for 9/14/95). One duplicate surface water sample (RA-SW-27) was collected with RA-SW-11. Matrix spike/matrix spike duplicate samples were taken with samples RA-GW-01, RA-SW-01 and RA-SE-01 and are not considered additional samples.

FIELD OBSERVATIONS

Water Quality Field Measurements

The URS field sampling teams took water quality field measurements (water temperature, pH and conductivity) at all surface water sampling stations and from several tributary streams to the Dolores River that were not sampled. The locations and results of the field readings are displayed on Figure 2.

Figure 3 graphically displays the variations in pH of the eight stations sampled along the Dolores River. The pH of the Dolores River water at the background location (RA-SW-01) was recorded as 7.55. The Dolores River originates in volcanic (acidic) terrain and, upstream of Rico, enters an area where it is eroding a canyon through limestone cliffs of the Hermosa Formation.

The measured pH of the Dolores River increased at sample location RA-SW-02 to pH 8.19. Sample location RA-SW-02 is on the east bank of the Dolores River immediately adjacent to the uppermost settling pond. The upper most settling pond is separated from the Dolores River by an unlined berm which is approximately 50 feet wide and a ditch which flows adjacent to the cyanide leach pits and uppermost settling pond. The pH of the water in the uppermost settling pond was 8.28. Infiltration of settling pond water through the berm into the Dolores River could possibly be the cause of the high pH reading at sample station RA-SW-02.

The pH of the Dolores River drops back to near background at RA-SW-03. The lowest measured pH (6.80) on the main channel of the Dolores River was recorded at RA-SW-04, just downstream of the confluence of Silver Creek and the Dolores River (Figure 2). The lowest pH measured on Silver Creek was 7.28. As the Dolores River leaves the Rico mining district the pH of the river water increases. This increase may be a result of the tributary streams which are draining the limestones of the Hermosa Formation.

The lowest pH reading along the Dolores River was obtained from a water quality station designated as Dolores River, East Channel (immediately upstream of RA-SW-08). This location is a small side channel that is actively eroding a tailings pile during periods of high flow. The

bed of the channel is noticeably stained with what appears to be iron staining and the pH of the channel waters was measured as 6.32.

Figure 4 displays the conductivity reading obtained along the Dolores River. There is a noticeable peak in conductivity at the NPDES outfall for the Rico/Argentine mine and mill. The conductivity quickly decreases to a new level that is slightly above background.

The URS field crew gauged the flow of Silver Creek (at three locations, 100 feet downstream of State Highway 145), of the Dolores River (at Aztec Gulch just above the NPDES outfall) and at Scotch Creek. Scotch Creek has a flow rate similar to Silver Creek and was gauged as a quality control check. These results will be included in the Analytical Results Report (ARR).

The URS field crew also described and delineated wetlands along the Dolores River for approximately one mile downstream of the confluence of Silver Creek. Several small (less than one acre) were noted for the first three-quarters of a mile. A larger palustrine scrub/shrub (obligate) wetland, approximately five acres in size, was documented between three-quarters and one mile downstream of the Silver Creek/Dolores River Confluence.

An ARR will be submitted to EPA within ten weeks of the receipt of the last validated data package.

TABLE 1
Sample Locations and Rationale

Sample Matrix	Sample ID	Location	Rationale
Surface Water	RA-SW-01	Upstream of site influences on the Dolores River.	Establish background conditions on the Dolores River.
	RA-SW-02	Adjacent to tailings piles on the Dolores River.	Test for impacted fishery.
	RA-SW-03	Confluence of drainage from settling ponds and the Dolores River.	Test for impacted fishery.
	RA-SW-04	Confluence of Silver Creek and the Dolores River.	Test for impacted fishery.
	RA-SW-05	Upstream of site influences on Silver Creek.	Establish background conditions on Silver Creek.
	RA-SW-06	Downstream of tailings piles on Silver Creek.	Test for impacted fishery.
	RA-SW-07	Silver Creek, downstream of tailings pile in town of Rico.	Test for impacted fishery.
	RA-SW-08	1.7 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SW-09	1.9 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SW-10	2.8 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SW-11	5.8 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.

TABLE 1
Sample Locations and Rationale
(continued)

Sample Matrix	Sample ID	Location	Rationale
Surface Water (continued)	RA-SW-12	Opportunity sample; field-located on tributary to the Dolores River	Sample not collected.
	RA-SW-13	Opportunity sample; field-located on tributary to the Dolores River	Sample not collected.
	RA-SW-14	Opportunity sample; field-located on tributary to the Dolores River	Sample not collected.
	RA-SW-15	Opportunity sample; field-located on tributary to the Dolores River	Sample not collected.
	RA-SW-16	Opportunity sample; field-located on tributary to the Dolores River	Sample not collected.
	RA-SW-17	Opportunity sample; field-located on tributary to the Dolores River	Sample not collected.
Sediment	RA-SE-01	Upstream of site influences on the Dolores River.	Establish background conditions on the Dolores River.
	RA-SE-02	Adjacent to tailings piles on the Dolores River.	Test for impacted fishery.
	RA-SE-03	Confluence of drainage from settling ponds and the Dolores River.	Test for impacted fishery.
	RA-SE-04	Confluence of Silver Creek and the Dolores River.	Test for impacted fishery.
	RA-SE-05	Upstream of site influences on Silver Creek.	Establish background conditions on Silver Creek.
	RA-SE-06	Downstream of tailings pile on Silver Creek.	Test for impacted fishery.

TABLE 1
Sample Locations and Rationale
 (continued)

Sample Matrix	Sample ID	Location	Rationale
Sediment (continued)	RA-SE-07	Silver Creek, downstream of tailings pile in the town of Rico.	Test for impacted fishery.
	RA-SE-08	1.7 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SE-09	1.9 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SE-10	2.8 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SE-11	5.3 miles downstream of Outfall 002 on the Dolores River.	Test for impacted fishery and/or segment of impacted wetlands downstream of Outfall 002.
	RA-SE-12	Opportunity sample; field located on tributary to the Dolores River	Sample not collected.
	RA-SE-13	Opportunity sample; field located on tributary to the Dolores River	Sample not collected.
	RA-SE-14	Opportunity sample; field located on tributary to the Dolores River	Sample not collected.
	RA-SE-15	Opportunity sample; field located on tributary to the Dolores River	Sample not collected.
	RA-SE-16	Opportunity sample; field located on tributary to the Dolores River	Sample not collected.
	RA-SE-17	Opportunity sample; field located on tributary to the Dolores River	Sample not collected.

TABLE 1
Sample Locations and Rationale
(continued)

Sample Matrix	Sample ID	Location	Rationale
Surface Soil	RA-SO-01	Sample from off-site location, outside of site influences.	Establish background soil conditions.
	RA-SO-02	Opportunity soil sample from residential property in Rico.	Establish contaminated soil source area.
	RA-SO-03	Opportunity soil sample from residential property in Rico.	Establish contaminated soil source area.
	RA-SO-04	Opportunity soil sample from residential property in Rico.	Establish contaminated soil source area.
	RA-SO-05	Opportunity soil sample from residential property in Rico.	Establish contaminated soil source area.
	RA-SO-06	Opportunity soil sample from residential property in Rico.	Establish contaminated soil source area.
	RA-SO-07	Opportunity soil sample from residential property in Rico.	Sample not collected.
Groundwater	RA-GW-01	Groundwater sample from upgradient well in the Dolores River Valley.	Establish background conditions in same aquifer as downgradient groundwater sample.
	RA-GW-02	Opportunity groundwater sample.	Sample not collected.
	RA-GW-03	Opportunity groundwater sample.	Sample not collected.
	RA-GW-04	Opportunity groundwater sample.	Sample no collected.
Adit Sample	RA-WGW-01	Source sample from the outfall of the St. Louis Tunnel.	Characterize mine discharge from St. Louis Tunnel.

TABLE 1
Sample Locations and Rationale
(continued)

Sample Matrix	Sample ID	Location	Rationale
Hot Spring Sample	RA-WGW-02	Surface water sample from geothermal spring adjacent to settling pond.	Characterize public use geothermal spring.
Source Characterization	RA-WSO-01	Soil sample from abandoned cyanide leach pits along the Dolores River.	Characterize cyanide leach pits.
	RA-WSO-02	Soil sample from abandoned cyanide leach pits along the Dolores River.	Characterize cyanide leach pits.
	RA-WSO-03	Tailings piles along Silver Creek.	Characterize tailings piles.
	RA-WSO-04	Tailings piles along Silver Creek.	Characterize tailings piles.
	RA-WSO-05	Tailings pile at confluence of Silver Creek and the Dolores River.	Characterize tailings pile.
	RA-WSO-06	Tailings pile along the Dolores River, south of Rico.	Characterize tailings pile.
	RA-WSO-07	Tailings along the Dolores River, one mile south of Rico.	Characterize tailings pile.
	RA-WSO-08	Opportunity soil sample from soil in the vicinity of fuel tank at the mill site.	Characterize former contents of empty tank.
	RA-WSW-01	Aqueous sample from uppermost settling pond adjacent to the Dolores River.	Characterize contents of settling pond.
	RA-WSW-02	Aqueous sample from lowermost settling pond adjacent to the Dolores River.	Characterize contents of settling pond.

TABLE 1
Sample Locations and Rationale
 (continued)

Sample Matrix	Sample ID	Location	Rationale
Source Characterization (continued)	RA-WSW-03	Aqueous sample from ditch adjacent to upper settling ponds along the Dolores River.	Characterize contents of ditch.
	RA-WSE-01	Sediment sample from uppermost settling pond adjacent to the Dolores River.	Characterize contents of settling pond.
	RA-WSE-02	Sediment sample from lowermost settling pond adjacent to the Dolores River.	Characterize contents of settling pond.
	RA-WSE-03	Sediment sample from ditch adjacent to upper settling ponds along the Dolores River.	Characterize contents of ditch.
QA/QC	RA-SW-18	VOA Trip Blank Sample	Document contamination introduced during sample handling and shipping.
	RA-SW-19	VOA Trip Blank Sample	Document contamination introduced during sample handling and shipping.
	RA-SW-20	VOA Trip Blank Sample	Document contamination introduced during sample handling and shipping.
	RA-SW-22	Rinsate Blank Sample	Document thoroughness of decontamination procedures on soil sampling equipment
	RA-SW-23	Rinsate Blank Sample	Document thoroughness of decontamination procedures on soil sampling equipment
	RA-SW-24	Rinsate Blank Sample	Document thoroughness of decontamination procedures on sediment sampling equipment.
	RA-SW-25	Rinsate Blank Sample	Document thoroughness of decontamination procedures on soil sampling equipment.

TABLE 1
Sample Locations and Rationale
(continued)

Sample Matrix	Sample ID	Location	Rationale
QA/QC (continued)	RA-SW-26	Duplicate of RA-SW-04	Determine the precision of sample collection procedures and laboratory analyses.
	RA-SW-27	Duplicate of RA-SW-11	Determine the precision of sample collection procedures and laboratory analyses.
	RA-SW-93	VCA Trip Blank Sample	Document contamination introduced during sample handling and shipping.
	RA-GW-06	Duplicate of RA-GW-03	Sample not collected.

Figure 3

pH on Dolores River

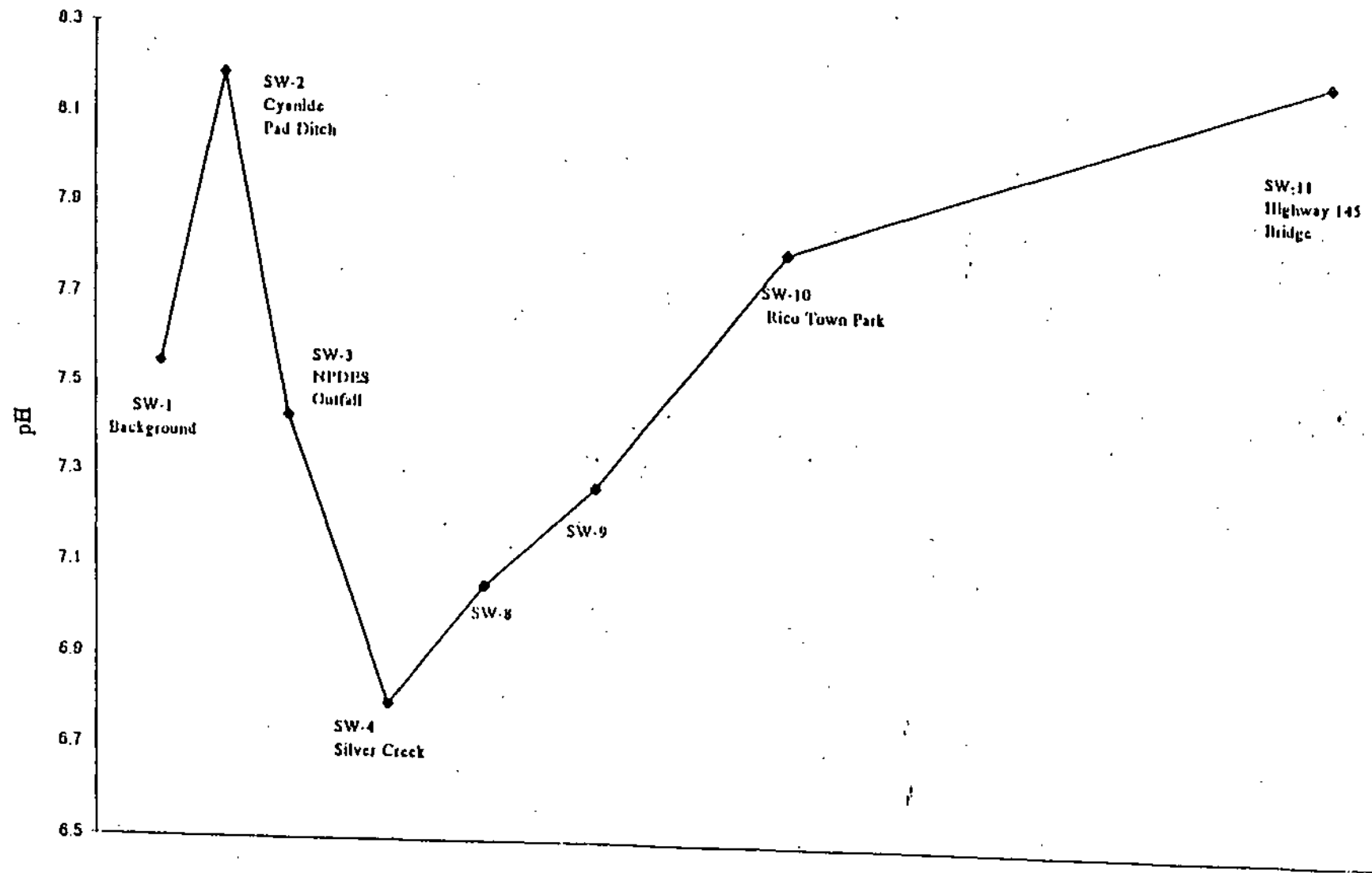
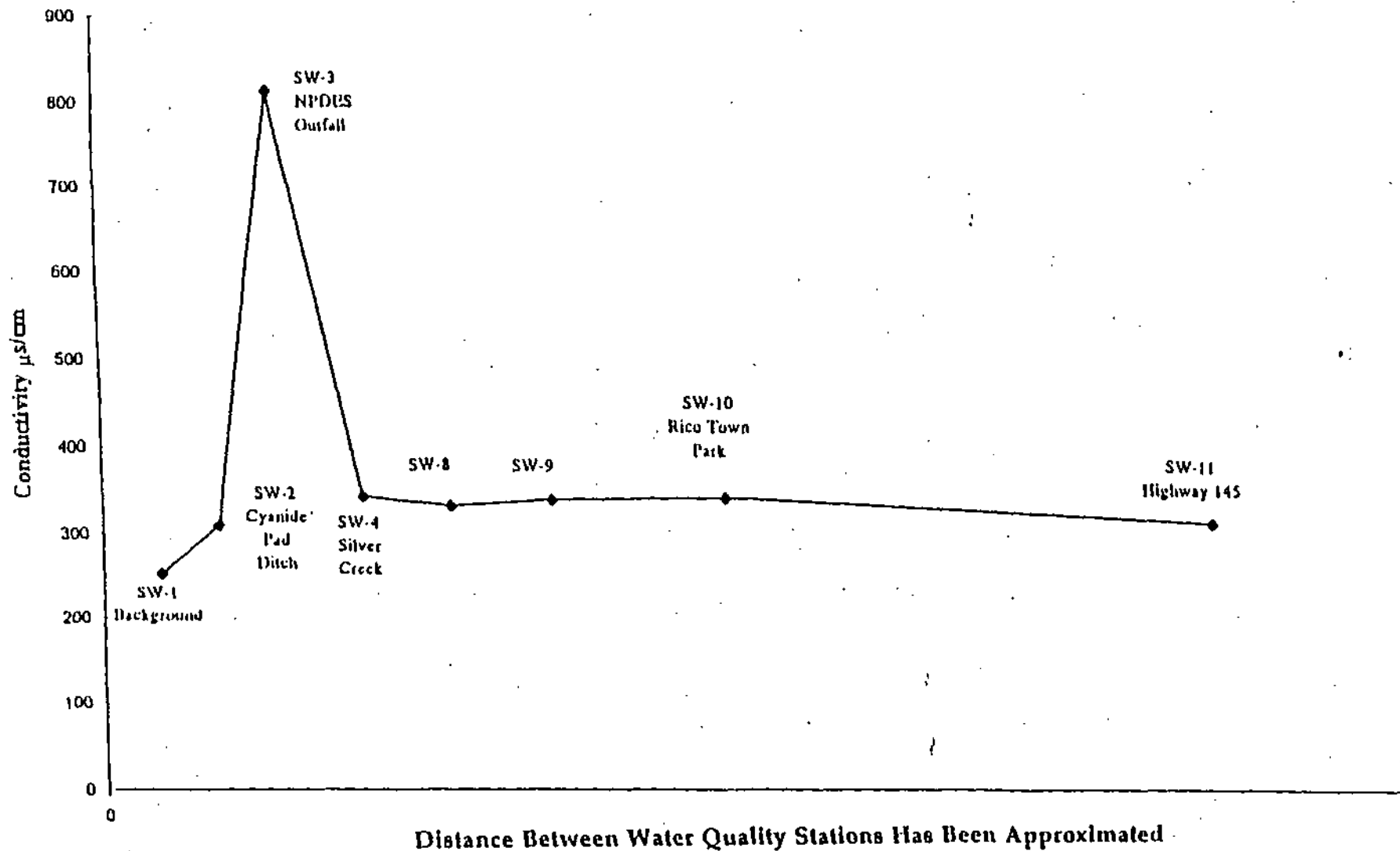


Figure 3
Rico/Argentine SAR

Distance Between Water Quality Stations Has Been Approximated

Figure 4

Conductivity on Dolores River





United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

SAS No.
(if applicable)

Case No.

24008

1. Project Code RA	Account Code 41801.58	2. Region No. 8	Sampling Co. URS	4. Date Shipped 9/13/95	Carrier Fedex	6. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field OC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)	7. Preservative (Enter in Column D) 1. HCl 2. HNO ₃ 3. NaOH 4. H ₂ SO ₄ 5. K ₂ Cr ₂ O ₇ 6. Ice only 7. Other (specify in Column D) 8. Not preserved
Regional Information Non-Superfund Program		Sampler (Name) Rachel S. Badger		Airbill Number 1255918064			
Site Name Rico, Argentine		Sampler Signature Rachel S. Badger		5. Ship To Southwest Labs of Oklahoma 1700 West Albany, Suite C Broken Arrow, OK 74012 918/251-2858 ATTN: Sample Custodian			
City, State Rico, CO		3. Purpose* Early Action: <input checked="" type="checkbox"/> CLEM PA <input type="checkbox"/> PA REM <input type="checkbox"/> REM III <input type="checkbox"/> III SI <input type="checkbox"/> SI FED <input type="checkbox"/> FED Long Term Action: <input type="checkbox"/> FS RO <input type="checkbox"/> RO RA <input type="checkbox"/> RA O&M <input type="checkbox"/> O&M NPLD <input type="checkbox"/> NPLD		Site Spill ID —			

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preserva- tive (from Box 7)	E - RAS Analysis						F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field OC Qualifier <small>H = Blank S = Spill O = High only H = Hazardous PE = Petroleum Event etc. Use a OC Sample</small>	
	Other:			Other:	Diss. Metals	Total Metals	Cyanide	NO ₂ /NO ₃	Low only	High only							Conduct
MHDD98	1	low	G	2		X	X					8-130321	RA-SW-23	9/13/95 1635	HR577	RSB	R
MHDD98	1	↓	↓	3			X					8-130322	RA-SW-23	↓ 1635	↓	↓	R
MHDD99	5	↓	↓	6		X						8-130323	RA-SW-22	↓ 1630	HR578	↓	
MHDD99	5	↓	↓	6			X					8-130324	RA-SW-22	↓ 1630	↓	↓	
Rachel S. Badger																	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory OC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
N	2 of 7	—	Proy. Ret. M. L. H. L. L. L. L.	

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) Rachel S. Badger	Date / Time 9/13/95 1200	Received by: (Signature) Fedex	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

SAS No.
(if applicable)

Case No.

1. Project Code RA	Account Code 4186158	2. Region No. 8	Sampling Co. URS	4. Date Shipped 9/13/95	Carrier Fedex	6. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	7. Preservative (Enter in Column D) 1. HCl 2. HNO ₃ 3. NaHSO ₄ 4. H ₂ SO ₄ 5. Ice only 6. Other (Specify in Column D) N. Not preserved
Regional Information		Sampler (Name) Rachel S. Badger		Airbill Number 1255918053			
Non-Superfund Program		Sampler Signature Rachel S. Badger		5. Ship To RECREA Environmental			
Site Name Rico Argentine		3. Purpose		8300 Guilford Rd, Bldg F Columbia, MD 21046 410/381-2288 ATTN: Sample Custodian			
City, State Rico, CO		Site Spill ID					

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other	E PAS Analysis				F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Check 1. Blank 2. Spike 3. Duplicate 4. Preservative 5. Chain of Custody
					VOA	BNA	PAHs	High only ARO/TOX						
✓ HRS64	5	low	9	5		X			8-13194	RA-W50-03	9/12/95 1205	MH12059	RB	
✓ HRS66	5	low	9	5		X			8-13197	RA-W50-03	9/12/95 1205	↓		
✓ HRS67	1	low	9	5		X			8-130363, 8-130364	RA-SW-03	9/12/95 1100	MHDD90		
✓ HRS67	1	low	9	5		X			8-130364, 8-130365	RA-SW-03	9/12/95 1100	MHDD90		
✓ HRS67	1		9	5		X			8-130367, 8-130368	RA-SW-03	9/12/95 1100	MHDD90		
✓ HRS68	5					X			8-130369	RA-SE-03	9/12/95 1100	MHDD91		
✓ HRS68	5					X			8-130370	RA-SE-03	9/12/95 1100	↓		
✓ HRS68	5					X			8-130371	RA-SE-03	9/12/95 1100	↓		
✓ HRS69	5					X			8-130372	RA-SO-01	9/12/95 1200	MHPD92		
✓ HRS69	5					X			8-130373	RA-SO-01	9/12/95 1200	↓		

Shipment for Case Complete? (Y/N) **N** Page **10** of **10** Sample(s) to be Used for Laboratory QC Additional Sampler Signatures **Rachel S. Badger** Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) Rachel S. Badger	Date / Time 9/13/95 1200	Received by: (Signature) Fedex	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none



United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

SAS No.
(if applicable)

Case No.

24008

1. Project Code RA		Account Code 41861-54		2. Region No. 8		Sampling Co. URS		4. Date Shipped 9/13/95		Carrier FedEx		6. Matrix (Enter in Column A)		7. Preservative (Enter in Column D)	
Regional Information				Sampler (Name) Rachel S. Badger				Audit Number 1055918053				1. Surface Water		1. HCl	
Non-Superfund Program				Sampler Signature <i>[Signature]</i>				5. Ship To RECLA ENVIRONMENTAL				2. Ground Water		2. HNO3	
Site Name RIKO ARGENTINE				3. Purpose				8. Oil (High only)				3. Leachate		3. NaHSO4	
City, State RIKO CO				Site Spill ID				9. Soil/Sediment				4. Field QC		4. H2SO4	
				Early Action				10. Oil (High only)				5. Ice only		5. Other	
				Long-Term Action				11. Waste (High only)				6. Other (Specify in Column A)		6. Other (Specify in Column D)	
				Last				ATTN: SAMPLE COORDINATOR				7. Waste (High only)		N. Not preserved	
				SF								8. Other (Specify in Column A)			
				PRP											
				ST											
				FED											
				CLEM											
				PA											
				REM											
				FI											
				SI											
				ESI											
				FS											
				RD											
				HA											
				O&M											
				NPLD											

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp / Grab	D Preservative (from Box 7)	E NAS Analysis			F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier
					VOA	BNA	High only						
✓✓ 11R549	1	Low	Grab	5				8-131021	8-131022	RA-SW-10	09/11/95 1730	MHDD70	PSB
✓✓ 11R549								8-131023	8-131024	RA-SW-10	1730	✓	
✓✓ 11R551								8-131025	8-131026	RA-SW-11	1628	MHDD71	
✓✓ 11R551								8-131027	8-131028	RA-SW-11	1628	✓	
✓✓ 11R551								8-131029	8-131030	RA-SW-11	✓ 1628	✓	
✓ 11R559	5							8-131031		RA-SE-07	09/12/95 1007	MHDD73	
✓ 11R559	5							8-131032		RA-SE-07	✓ 1007	✓	
✓ 11R551								8-131033		RA-SE-07	11/1/95 1007	✓	
✓ 11R554								8-131034		RA-SE-08	11/1/95 1855	MHDD74	
✓ 11R554	5							8-131035		RA-SE-08	11/1/95 1855	✓	

Shipment for Case Complete? (Y/N) **N** Page **8** of **10** Sample(s) to be Used for Laboratory QC Additional Sampler Signatures *[Signatures]* Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) Rachel S. Badger	Date / Time 9/13/95 1200	Received by: (Signature) FedEx	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

SAS No.
(if applicable)

Case No.

24008

1. Project Code RA	Account Code 418101.58	2. Region No. 8	Sampling Co. URS	4. Date Shipped 9/13/95	Carrier Fedex				
Regional Information		Sampler (Name) Rachel S. Badger		Airbill Number 1255918053					
Non-Superfund Program		Sampler Signature Rachel S. Badger		5. Ship To RECRA Environmental 8320 Guilford Rd, Bldg. F Columbia, MD 21046 4/0/381-2288 ATTN: Sample Custodian					
Site Name Rico Argentine		3. Purpose*							
City/State Rico, CO	Site Spill ID	<table border="0"> <tr> <td>Early Action</td> <td>Long-Term Action</td> </tr> <tr> <td> <input type="checkbox"/> SF <input type="checkbox"/> PRP <input type="checkbox"/> ST <input type="checkbox"/> FED </td> <td> <input checked="" type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> SI <input checked="" type="checkbox"/> ESI </td> </tr> </table>		Early Action	Long-Term Action	<input type="checkbox"/> SF <input type="checkbox"/> PRP <input type="checkbox"/> ST <input type="checkbox"/> FED	<input checked="" type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> SI <input checked="" type="checkbox"/> ESI		
Early Action	Long-Term Action								
<input type="checkbox"/> SF <input type="checkbox"/> PRP <input type="checkbox"/> ST <input type="checkbox"/> FED	<input checked="" type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> SI <input checked="" type="checkbox"/> ESI								

6. Matrix (Enter in Column A)
1. Surface Water
 2. Ground Water
 3. Leachate
 4. Field QC
 5. Soil/Sediment
 6. Oil (High only)
 7. Waste (High only)
 8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
 2. HNO₃
 3. NaHSO₄
 4. H₂SO₄
 5. Ice only
 6. Other (Specify in Column D)
 - N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other	E RAS Analysis			F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier H. Blank, S. Spill, F. Field, PL. Pre-lab, L. Lab, A. QC Sample
					AO	AN	AOX						
✓ HR573	5	Low	5					8-130394	RA-WS0-01	9/13/95 1445	MHDD95	RSB	
✓ HR574	1		5	X				8-130397, 8-130398	RA-SW-05	9/12/95 1515	MHDD96		
✓ ↓	1				X			8-130399, 8-130400	RA-SW-05				
✓ ↓	1					X		8-130301, 8-130302	RA-SW-05				
✓ HR575	5			X				8-130303	RA-SE-05		MHDD97		
✓ ↓	5				X			8-130304	RA-SE-05				
✓ ↓	5					X		8-130305	RA-SE-05				
✓ HR576	1		5	X				8-130310, 8-130311	RA-SW-19	9/18/95 1942			B
✓ HR577	1		5	X				8-130312, 8-130313	RA-SW-23	9/12/95 1405	MHDD98		R
✓ HR577	1		5	X				8-130314, 8-130315	RA-SW-23				R

Shipment for Case Complete? (Y/N) **N** Page **10** of **10** Sample(s) to be Used for Laboratory QC Additional Sampler Signatures **Rachel S. Badger** Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) Rachel S. Badger	Date / Time 9/13/95 1200	Received by: (Signature) Fedex	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none



United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

SAS No.
(if applicable)

Case No.

24 008

1. Project Code RA	Account Code 41861.58	2. Region No. 8	Sampling Co. URS	4. Date Shipped 9/13/95	Carrier FedEx	6. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	7. Preservative (Enter in Column D) 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N Not preserved
Regional Information 8 mo		Sampler (Name) Metha Leslie		Airbill Number 1255918053			
Non-Superfund Program		Sampler Signature <i>[Signature]</i>		5. Ship To RECREA Environmental			
Site Name Roco Argentine		3. Purpose Early Action CLEM PA NEM III SI EST		Long Term Action FS RD HA O&M NPLD			
City, State Roco, Co		Site Spill ID		8320 Guilford Rd Bldg F			
				Columbia MD 21046			
				410-381-2288			
				ATTN: Sample Custodian			

CLP Sample Numbers (from labels)	A Matrix (from Box G)	B Conc. Low Med High	C Sample Type: Comp / Grab	D Preservative (from Box 7)	E RAS Analysis				F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No	J Sampler Initials	K Field QC Qualifier
					VOA	BNA	Res/PCB	High only ARO/TOX						
✓ HR558	1	Low	Grab	5	X	X	X		8-131001, 8-131007	RA-SW-07	09/13/95 1007	MH10282	MR	
✓ ↓	1			5		X			8-131002, 8-131004	RA-SW-07	1007	↓		
✓ ↓	1			5		X			8-131003, 8-131005	RA-SW-07	1007	↓		
✓ HR555	1			5	X				8-131006, 8-131008	RA-SW-08	09/13/95 1855	MH10278		
✓ ↓	1			5		X			8-131009, 8-131010	RA-SW-08	1855	↓		
✓ ↓	1			5		X			8-131012, 8-131011	RA-SW-08	1855	↓		
✓ HR55A	1			5	X				8-131013, 8-131014	RA-SW-09	1825	MH10281		
✓ ↓	1			5		X			8-131015, 8-131016	RA-SW-09	1825	↓		
✓ ↓	1			5		X			8-131017, 8-131018	RA-SW-09	1825	↓		
✓ HR549	1	✓	✓	5	X				8-131019, 8-131020	RA-SW-10	1730	MH10270	✓	

Shipment for Case Complete? (Y/N)	Page 4 of 10	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures <i>[Signature]</i> , <i>[Signature]</i> , <i>[Signature]</i>	Chain of Custody Seal Number(s)
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CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 9/13/95 1200	Received by: (Signature) FedEx	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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SEE REVERSE FOR PURPOSE CODE DEFINITIONS

360543



United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

SAS No.
(if applicable)

Case No.

24008

1. Project Code RA	Account Code 41861-58	2. Region No. 8	Sampling Co. URS	4. Date Shipped 9/13/99	Carrier FEDEX
Regional Information		Sampler (Name) <i>W. K. Feltz</i>		Airbill Number 1055918053	
Non-Superfund Program		Sampler Signature		5. Ship To RECRA ENVIRONMENTAL 8320 GUILFORD RD BLDG F COLUMBIA, MD 21046 410-381-2288 ATTN: SAMPLE CUSTODIAN	
Site Name RICO ARGENTINE		3. Purpose*			
City, State RICO CO		Site Spill ID			
		<input type="checkbox"/> SF <input type="checkbox"/> PIP <input type="checkbox"/> ST <input type="checkbox"/> FED		<input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> HI <input type="checkbox"/> SI <input checked="" type="checkbox"/> ESI	
		<input type="checkbox"/> Lead <input type="checkbox"/> FS <input type="checkbox"/> ID <input type="checkbox"/> IIA <input type="checkbox"/> O&M <input type="checkbox"/> NPLD			

6. Matrix (Enter in Column A)
1. Surface Water
 2. Ground Water
 3. Leachate
 4. Field OC
 5. Soil/Sediment
 6. Oil (High only)
 7. Waste (High only)
 8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
 2. HNO3
 3. NaHSO4
 4. H2SO4
 5. Ice only
 6. Other (Specify in Column D)
 - N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7)	E RAS Analysis				F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field OC Qualifier D - Duplicates E - Emissions F - Fish Kills G - Groundwater H - Hazardous Waste I - Inorganic J - Jetties K - Kerosene L - Lead M - Mercury N - Noise O - Oil P - Pesticides Q - PCBs R - Radon S - Sediment T - Tides U - Unidentified V - Volatile W - Wind X - X-ray Y - Yards Z - Zebra Mussels
	Other			Other	VOA	BNA	Post PCB	High only ARO/TOX						
✓ H-R 550	E	Low	Grab	S					8-131030	RA-SE-08	09/11/95 1855	MHDD79	WZ	
✓ H-R 557	S				X				8-131037	KA-SE-09	1825	MHDD80		
✓ H-R 557						X			8-131038	KA-SE-09	1825	↓		
✓ H-R 557							X		8-131039	KA-SE-09	1825	↓		
✓ H-R 550					X				8-131040	RA-SE-10	1730	MHDD73		
✓ H-R 550						X			8-131041	KA-SE-10	1730	↓		
✓ H-R 550							X		8-131042	KA-SE-10	1730	↓		
✓ H-R 552					X				8-131043	KA-SE-11	1628	MHDD72		
✓ H-R 552						X			8-131044	KA-SE-11	1628	↓		
✓ H-R 552	✓	✓	✓	✓			X		8-131045	KA-SE-11	1628	↓	✓	
Shipment for Case Complete? (Y/N)		Page		Sample(s) to be Used for Laboratory QC				Additional Sampler Signatures				Chain of Custody Seal Number(s)		
N		2 of 10						Richard Badger Rina P.H. 16						

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>Richard Badger</i>	9/13/99 1200	<i>Felex</i>			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/None



Inorganic Name Report & Chain of Custody Record (For Inorganic CLP Analysis)

SAS No.
(if applicable)

Case No.

24008

1. Project Code RA	Account Code 418LA 58	2. Region No. 8	Sampling Co. URS	4. Date Shipped 9/13/95	Carrier Fedex	6. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)	7. Preservative (Enter in Column D) 1. HCl 2. HNO ₃ 3. NaOH 4. H ₂ SO ₄ 5. K ₂ Cr ₂ O ₇ 6. H ₂ O only 7. Other (specify in Column D) N. Not preserved
Regional Information —		Sampler (Name) Rachel Badger		Antibill Number 1255918064			
Non-Superfund Program —		Sampler Signature Rachel Badger		5. Ship To Southwest Labs Oklahoma 1700 West Albany, Suite C Broken Arrow, OK 74012 918/251-2858 ATTN: Sample Custodian			
Site Name Rice Argentine		3. Purpose Early Action <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> III <input type="checkbox"/> SI <input checked="" type="checkbox"/> ESI Long Term Action <input type="checkbox"/> FS <input type="checkbox"/> RO <input type="checkbox"/> RA <input type="checkbox"/> OSM <input type="checkbox"/> NPLD					
City, State Rico, CO		Site Spill ID —					

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other	E - RAS Analysis						F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier
					Loss Metals	Total Metals	Cyanide	NO ₂ /NO ₃	Fluoride	IsH						
MHDD93	1	low	g	2	X							8-130380	RA-SW-02	9/13/95 1340	HR570	RS13
↓	1			3		X						8-130387	RA-SW-02		↓	
MHDD94	5			6	X							8-130388	RA-SE-02		HR571	
↓	5			6		X						8-130389	RA-SE-02	↓ ↓	↓	
MHDD95	5			6	X							8-130395	RA-WSP-04	9/13/95 1449	HR573	
MHDD95	5			6		X						8-130396	RA-WSP-04	↓ ↓	HR573	
MHDD96	1			2	X							8-130306	RA-SW-05	9/13/95 1515	HR574	
↓	1			3		X						8-130307	RA-SW-05		↓	
MHDD97	5			6	X							8-130308	RA-SE-05		HR575	
↓	5			6		X						8-130309	RA-SE-05	↓ ↓	↓	

Shipment for Case Complete? (Y/N) N	Page 3 of 7	Sample(s) to be Used for Laboratory QC —	Additional Sampler Signatures Bryan Butchell	Chain of Custody Seal Number(s)
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CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) Rachel S. Badger	Date / Time 9/13/95 1200	Received by: (Signature) Fedex	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/no

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361527



United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

SAS No.
(if applicable)

Case No.

24008

1. Project Code RA	Account Code W861-58	2. Region No. 8	Sampling Co. URS	4. Date Shipped 9/13/95	Carrier FEDEX	6. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)	7. Preservative (Enter in Column D) 1. HCl 2. HNO ₃ 3. NaOH 4. H ₂ SO ₄ 5. K ₂ Cr ₂ O ₇ 6. Ice only 7. Other (specify in Column D) N Not preserved
Regional Information		Sampler (Name) Roger Petrucci		Airbill Number 1255918064			
Non-Superfund Program		Sampler Signature <i>[Signature]</i>		5. Ship To SOUTHWEST LABS OF OKLAHOMA 1700 W. ALBANY, SUITE C BROKEN ARROW, OK 74012 918-251-2858 ATTN: SAMPLE COORDINATOR			
Site Name RICO ARGENTINE		J. Purpose Early Action <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> FIEM <input type="checkbox"/> III <input type="checkbox"/> SI <input checked="" type="checkbox"/> ESI		Long Term Action <input type="checkbox"/> FS <input type="checkbox"/> ND <input type="checkbox"/> HA <input type="checkbox"/> O&M <input type="checkbox"/> NPLO			
City, State RICO, CO	Site Spill ID						

CLP Sample Numbers (from labels)	A Matrix (from Box 6) <small>Other:</small>	B Conc.: Low Med High	C Sample Type: Comp / Grab	D Preservative (from Box 7) <small>Other:</small>	E - RAS Analysis						F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier <small>B - Blank S - Spike D - Duplicate H - Homoc PL - Packed Load * Not a QC Sample</small>
					Diss Metals	Total Metals	Cyanide	NO ₂ /NO ₃	Fluoride	pH						
✓ MHDD87	1	Low	GAB	2		X						8-130279	RA-SW-07	9/13/95 1007	HR558	AP
✓ MHDD82	1			3			X					8-130280	RA-SW-07	9/13/95 1007	↓	
✓ MHDD78	1			2		X						8-130281	RA-SW-08	9/13/95 1855	HR555	
✓ MHDD78	1			3			X					8-130282	RA-SW-08	1855	↓	
✓ MHDD81	1			2		X						8-130283	RA-SW-09	1825	HR554	
✓ MHDD81	1			3			X					8-130284	RA-SW-09	1825	↓	
✓ MHDD70	1			2		X						8-130285	RA-SW-10	1730	HR549	
✓ MHDD70	1			3			X					8-130286	RA-SW-10	1730	↓	
✓ MHDD71	1			2		X						8-130287	RA-SW-11	1628	HR551	
✓ MHDD71	1			3			X					8-130288	RA-SW-11	1628	↓	

Shipment for Case Complete? (Y/N) N	Page 5 of 7	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures <i>[Signatures]</i>	Chain of Custody Seal Number(s)
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CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) <i>Rachel S. Badger</i>	Date / Time 9/13/95 1000	Received by: (Signature) FEDEX	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

SAS No.
(if applicable)

Case No.

24008

1. Project Code RA		Account Code 41861.58		2. Region No 8		Sampling Co URS		4. Date Shipped 9/13/95		Carrier FED EX		6. Matrix (Enter in Column A)		7. Preservative (Enter in Column D)	
Regional Information				Sampler (Name) ROGER PENNELLA				Airbill Number 1255918004				1. Surface Water		1. HCl	
Non Superfund Program				Sampler Signature <i>[Signature]</i>				5. Ship To SOUTHWEST LABS OF OKLAHOMA				2. Ground Water		2. HNO ₃	
Site Name RICO ARGENTINE				3. Purpose				1700 W. ALBANY, SUITE C				3. Leachate		3. NaOH	
City, State RICO, CO				Site Spill ID				BROKEN ARROW, OK 74012				4. Field QC		4. H ₂ SO ₄	
				SF				918-251-2258				5. Soil/Sediment		5. K ₂ Cr ₂ O ₇	
				PAP				ATTN: SAMPLE COORDINATOR				6. Oil (High only)		6. Ice only	
				ST								7. Waste (High only)		7. Other (specify in Column D)	
				FED								8. Other (specify in Column A)		N. Not preserved	

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc.: Low Med High	C Sample Type: Comp/Grab	D Preservative (from Box 7)	E - RAS Analysis								F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier
					Diss. Metals	Total Metals	Cyanide	NO ₂ /NO ₃	Fluoride	pH	Conduct.	Low only						
✓ MHDD76	5	Low	GRAB	186	X							8-130298	RA-W50-05	9/11/95 1850	H0922	ap		
✓ MHDD76				186		X						8-130300	RA-W50-05	1850	↓	↓		
✓ MHDD74				186		X						8-131151	RA-W50-06	1738	H0923	↓		
✓ MHDD74				186		X						8-131152	RA-W50-06	1738	↓	↓		
✓ MHDD75				186		X						8-131153	RA-W50-07	1650	H0924	↓		
✓ MHDD75	✓	✓	✓	186		X						8-131154	RA-W50-07	1650	↓	↓		

Shipment for Case Complete? (Y/N) **N** Page **7** Samples to be Used for Laboratory QC Additional Sampler Signatures *[Signature]* Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) <i>Rachel S. Bridger</i>	Date / Time 9/13/95 1:00	Received by: (Signature) Fed ex	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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301525



United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analyses)

SAS No.
(if applicable)

Case No.

24008

1. Project Code RA	Account Code 41861.55	2. Region No. 8	Sampling Co. UITS	4. Date Shipped 9/14/95	Carrier FEDEX	6. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)	7. Preservative (Enter in Column D) 1. HCl 2. HNO ₃ 3. NaOH 4. H ₂ SO ₄ 5. K ₂ Cr ₂ O ₇ 6. Ice only 7. Other (specify in Column D) N. Not preserved
Regional Information		Sampler (Name) ROGER PETRELLA		Airbill Number 1255918274			
Non-Superfund Program		Sampler Signature <i>[Signature]</i>		5. Ship To SOUTHWEST LABS OF OKLAHOMA 700 W. ALBANY, SUITE C BROKEN ARROW, OK 74012 918-251-2858 ATTN: SAMPLE COORDINATOR			
Site Name RICO ARGENTINE		3. Purpose <input type="checkbox"/> SF <input type="checkbox"/> PRP <input type="checkbox"/> ST <input type="checkbox"/> FED	Early Action <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> NIEM <input type="checkbox"/> III <input type="checkbox"/> SI <input checked="" type="checkbox"/> ESI	Long Term Action <input type="checkbox"/> FFS <input type="checkbox"/> RD <input type="checkbox"/> RA <input type="checkbox"/> O&M <input type="checkbox"/> NPLD			
City, State RICO, CO	Site Spill ID						

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other	E - RAS Analysis								F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier <small>W - Blank, S - Spd, H - High, L - Low, F - Field, N - Not Preserved, E - Error</small>
					Diss. Metals	Total Metals	Cyanide	NO ₂ /NO ₃	Fluoride	pH	Conduct.							
MHDA88	1	L	G	2		X							8-13115	RA-WX-02	9/13/95 1155	HR584	MP	
MHDA88	1	L	G	3			X						8-13116	RA-WX-02	9/13/95 1155	HR584	MP	
MHDA89	5	L	G	6		X							8-13117	RA-WX-02	9/13/95 1155	HR474	MP	
MHDA89	5	L	G	6		X							8-13118	RA-WX-02	9/13/95 1155	HR474	MP	
MHDA90	1	L	G	2		X							8-13119	RA-WX-03	9/13/95 1400	HR475	MP	
MHDA90	1	L	G	3			X						8-13120	RA-WX-03	9/13/95 1400	HR475	MP	
MHDA91	5	L	G	6		X							8-13121	RA-WX-03	9/13/95 1400	HR476	MP	
MHDA91	5	L	G	6		X							8-13120	RA-WX-03	9/13/95 1400	HR476	MP	
MHDA92	1	L	G	2		X							8-131250	RA-WX-07	9/13/95 1430	HR477	MP	
MHDA92	1	L	G	3			X						8-131247	RA-WX-07	9/13/95 1430	HR477	MP	

Shipment for Case Complete? (Y/N) **Y** Page **2** of **4** Sample(s) to be Used for Laboratory QC Additional Sampler Signatures *[Signatures]* Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 9/14/95 1801	Received by: (Signature) FED EX	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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Yellow - Lab Copy for Return to SMO

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
SEE REVERSE FOR PURPOSE CODE DEFINITIONS



SAS No.
(if applicable)

Case Flo

2428

1. Project Code RA		Account Code 41861.58		2. Region No. Sampling Co. 8 VRS		4. Date Shipped Carrier 9/14/95 FEDEX		6. Matrix (Enter in Column A)		7. Preservative (Enter in Column D)			
Regional Information				Sampler (Name) ROGER PERRELLA		Airbill Number 1255918274		1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)		1. HCl 2. HNO ₃ 3. NaOH 4. H ₂ SO ₄ 5. K ₂ Cr ₂ O ₇ 6. Ice only 7. Other (specify in Column D) 8. Not preserved			
Non-Superfund Program				Sampler Signature <i>[Signature]</i>		5. Ship To SOUTHEAST LABS OF OKLAHOMA 1700 W. ALBANY, SUITE C BROKEN ARROW, OK 74012 918-251-2858 ATTN: SAMPLE COORDINATOR							
Site Name RICO, ARGENTINE				3. Purpose Early Action: <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> HEM <input type="checkbox"/> HI <input type="checkbox"/> SI <input checked="" type="checkbox"/> ESI Long Term Action: <input type="checkbox"/> FS <input type="checkbox"/> RD <input type="checkbox"/> RA <input type="checkbox"/> O&M <input type="checkbox"/> NPLO									
City, State RICO CO		Site Spill ID											
CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other	E - RAS Analysis Diss Metals: <input checked="" type="checkbox"/> Total Metals: <input checked="" type="checkbox"/> Cyanide: <input checked="" type="checkbox"/> NO ₂ /NO ₃ : <input checked="" type="checkbox"/> Fluoride: <input type="checkbox"/> pH: <input type="checkbox"/> Conduct: <input type="checkbox"/>			F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier 1. None 2. 1st Lab 3. 2nd Lab 4. 3rd Lab 5. 4th Lab 6. 5th Lab 7. 6th Lab 8. 7th Lab 9. 8th Lab 10. 9th Lab 11. 10th Lab 12. 11th Lab 13. 12th Lab 14. 13th Lab 15. 14th Lab 16. 15th Lab 17. 16th Lab 18. 17th Lab 19. 18th Lab 20. 19th Lab 21. 20th Lab 22. 21st Lab 23. 22nd Lab 24. 23rd Lab 25. 24th Lab 26. 25th Lab 27. 26th Lab 28. 27th Lab 29. 28th Lab 30. 29th Lab 31. 30th Lab 32. 31st Lab 33. 32nd Lab 34. 33rd Lab 35. 34th Lab 36. 35th Lab 37. 36th Lab 38. 37th Lab 39. 38th Lab 40. 39th Lab 41. 40th Lab 42. 41st Lab 43. 42nd Lab 44. 43rd Lab 45. 44th Lab 46. 45th Lab 47. 46th Lab 48. 47th Lab 49. 48th Lab 50. 49th Lab 51. 50th Lab 52. 51st Lab 53. 52nd Lab 54. 53rd Lab 55. 54th Lab 56. 55th Lab 57. 56th Lab 58. 57th Lab 59. 58th Lab 60. 59th Lab 61. 60th Lab 62. 61st Lab 63. 62nd Lab 64. 63rd Lab 65. 64th Lab 66. 65th Lab 67. 66th Lab 68. 67th Lab 69. 68th Lab 70. 69th Lab 71. 70th Lab 72. 71st Lab 73. 72nd Lab 74. 73rd Lab 75. 74th Lab 76. 75th Lab 77. 76th Lab 78. 77th Lab 79. 78th Lab 80. 79th Lab 81. 80th Lab 82. 81st Lab 83. 82nd Lab 84. 83rd Lab 85. 84th Lab 86. 85th Lab 87. 86th Lab 88. 87th Lab 89. 88th Lab 90. 89th Lab 91. 90th Lab 92. 91st Lab 93. 92nd Lab 94. 93rd Lab 95. 94th Lab 96. 95th Lab 97. 96th Lab 98. 97th Lab 99. 98th Lab 100. 99th Lab 101. 100th Lab 102. 101st Lab 103. 102nd Lab 104. 103rd Lab 105. 104th Lab 106. 105th Lab 107. 106th Lab 108. 107th Lab 109. 108th Lab 110. 109th Lab 111. 110th Lab 112. 111st Lab 113. 112nd Lab 114. 113rd Lab 115. 114th Lab 116. 115th Lab 117. 116th Lab 118. 117th Lab 119. 118th Lab 120. 119th Lab 121. 120th Lab 122. 121st Lab 123. 122nd Lab 124. 123rd Lab 125. 124th Lab 126. 125th Lab 127. 126th Lab 128. 127th Lab 129. 128th Lab 130. 129th Lab 131. 130th Lab 132. 131st Lab 133. 132nd Lab 134. 133rd Lab 135. 134th Lab 136. 135th Lab 137. 136th Lab 138. 137th Lab 139. 138th Lab 140. 139th Lab 141. 140th Lab 142. 141st Lab 143. 142nd Lab 144. 143rd Lab 145. 144th Lab 146. 145th Lab 147. 146th Lab 148. 147th Lab 149. 148th Lab 150. 149th Lab 151. 150th Lab 152. 151st Lab 153. 152nd Lab 154. 153rd Lab 155. 154th Lab 156. 155th Lab 157. 156th Lab 158. 157th Lab 159. 158th Lab 160. 159th Lab 161. 160th Lab 162. 161st Lab 163. 162nd Lab 164. 163rd Lab 165. 164th Lab 166. 165th Lab 167. 166th Lab 168. 167th Lab 169. 168th Lab 170. 169th Lab 171. 170th Lab 172. 171st Lab 173. 172nd Lab 174. 173rd Lab 175. 174th Lab 176. 175th Lab 177. 176th Lab 178. 177th Lab 179. 178th Lab 180. 179th Lab 181. 180th Lab 182. 181st Lab 183. 182nd Lab 184. 183rd Lab 185. 184th Lab 186. 185th Lab 187. 186th Lab 188. 187th Lab 189. 188th Lab 190. 189th Lab 191. 190th Lab 192. 191st Lab 193. 192nd Lab 194. 193rd Lab 195. 194th Lab 196. 195th Lab 197. 196th Lab 198. 197th Lab 199. 198th Lab 200. 199th Lab 201. 200th Lab 202. 201st Lab 203. 202nd Lab 204. 203rd Lab 205. 204th Lab 206. 205th Lab 207. 206th Lab 208. 207th Lab 209. 208th Lab 210. 209th Lab 211. 210th Lab 212. 211st Lab 213. 212nd Lab 214. 213rd Lab 215. 214th Lab 216. 215th Lab 217. 216th Lab 218. 217th Lab 219. 218th Lab 220. 219th Lab 221. 220th Lab 222. 221st Lab 223. 222nd Lab 224. 223rd Lab 225. 224th Lab 226. 225th Lab 227. 226th Lab 228. 227th Lab 229. 228th Lab 230. 229th Lab 231. 230th Lab 232. 231st Lab 233. 232nd Lab 234. 233rd Lab 235. 234th Lab 236. 235th Lab 237. 236th Lab 238. 237th Lab 239. 238th Lab 240. 239th Lab 241. 240th Lab 242. 241st Lab 243. 242nd Lab 244. 243rd Lab 245. 244th Lab 246. 245th Lab 247. 246th Lab 248. 247th Lab 249. 248th Lab 250. 249th Lab 251. 250th Lab 252. 251st Lab 253. 252nd Lab 254. 253rd Lab 255. 254th Lab 256. 255th Lab 257. 256th Lab 258. 257th Lab 259. 258th Lab 260. 259th Lab 261. 260th Lab 262. 261st Lab 263. 262nd Lab 264. 263rd Lab 265. 264th Lab 266. 265th Lab 267. 266th Lab 268. 267th Lab 269. 268th Lab 270. 269th Lab 271. 270th Lab 272. 271st Lab 273. 272nd Lab 274. 273rd Lab 275. 274th Lab 276. 275th Lab 277. 276th Lab 278. 277th Lab 279. 278th Lab 280. 279th Lab 281. 280th Lab 282. 281st Lab 283. 282nd Lab 284. 283rd Lab 285. 284th Lab 286. 285th Lab 287. 286th Lab 288. 287th Lab 289. 288th Lab 290. 289th Lab 291. 290th Lab 292. 291st Lab 293. 292nd Lab 294. 293rd Lab 295. 294th Lab 296. 295th Lab 297. 296th Lab 298. 297th Lab 299. 298th Lab 300. 299th Lab 301. 300th Lab 302.

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) J. C. Jones	Date / Time 9/14/95 / 1800	Received by: (Signature) FEO Ex	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

Green - Region Copy
White - Lab Copy for Return to Region

Pink - SMO Copy
Yellow - Lab Copy for Return to SMO

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS.

36151.5

THE



United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

SAS No.
(if applicable)

Case No.

24008

1. Project Code RA	Account Code 41861-58	2. Region No 8	Sampling Co. URS	4. Date Shipped 9/14/95	Carrier FEDEX
Regional Information		Sampler (Name) ROGER BETALLA		Airbill Number 1255918263	
Non-Superfund Program		Sampler Signature <i>[Signature]</i>		5. Ship To RELRA ENVIRONMENTAL 8320 GUILFORD RD, BLDG F COLUMBIA, MD 21046 410-381-2288	
Site Name RICO ARGENTINE		3. Purpose		ATTN: SAMPLE COORDINATOR	
City, State RICO, CO		Site Split ID			
		<input type="checkbox"/> SF <input type="checkbox"/> PHP <input type="checkbox"/> SI <input type="checkbox"/> FED		<input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> III <input type="checkbox"/> SI <input checked="" type="checkbox"/> ESI	

6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp/Grab	D Preservative (from Box 7)	E RAS Analysis				F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier
					VOA	BNA	PAHs	High only						
HR582	5	L	G	5		X			8-131223	RA-WSP-02	9/13/95 1102	MHCQ97	TC	
↓	↓	↓	↓	↓					8-131224	↓	↓	MHCQ97	TC	
HR583	2	L	G	5	X				8-131225, 26	RA-WGW-02	9/13/95 1135	MHCQ98	TC	
↓	2	L	G	5		X			8-131227, 28	↓	↓	↓	TC	
HR583	2	L	G	5			X		8-131229, 30	RA-WGW-02	↓	↓	↓	TC
HR584	1	L	G	5	X				8-131231, 32	RA-WSW-02	9/13/95 1155	MHPA88	TC	
↓	1	L	G	5		X			8-131233, 34	↓	↓	MHPA88	TC	
↓	1	L	G	5			X		8-131235, 36	↓	↓	MHPA88	TC	
HR474	5	L	G	5	X				8-131237	RA-WSE-02	9/13/95 1155	MHPA89	TC	
HR474	5	L	G	5		X			8-131238	RA-WSE-02	↓	↓	MHPA89	TC

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 9/14/95 1800	Received by: (Signature) Fed ex.	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	



& Chain of Custody Record

(For Organic CLP Analysis)

1. Project Code RA		Account Code 41861.58		2. Region No. 8		Sampling Co. URS		4. Date Shipped 9/14/95		Carrier FED EX		6. Preservative (Enter in Column D) 1. HCl 2. HNO ₃ 3. NaHSO ₄ 4. H ₂ SO ₄ 5. Other (Specify) 6. Ice only N. Not preserved		7. Sample Description (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Hinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)															
Regional Information				Sampler (Name) ROGER PETRELLA				Airbill Number 1255918263																					
Non-Superfund Program				Sampler Signature <i>Roger Petrella</i>				5. Ship To RECRA ENVIRONMENTAL 8320 GUILFORD RD. BLDG F COLUMBIA, MD 21046 410-381-2285																					
Site Name RICO ARGENTINE				3. Type of Activity Remedial Removal SF <input type="checkbox"/> PA <input type="checkbox"/> RIFS <input type="checkbox"/> CLEM <input type="checkbox"/> PMP <input type="checkbox"/> PA <input type="checkbox"/> REMA <input type="checkbox"/> SI <input type="checkbox"/> SSI <input type="checkbox"/> HIA <input type="checkbox"/> REM <input type="checkbox"/> FED <input type="checkbox"/> LSI <input checked="" type="checkbox"/> O&M <input type="checkbox"/> OIL <input type="checkbox"/> NPLD <input type="checkbox"/> UST <input type="checkbox"/>				ATTN: SHIRLEY COOPER/ADIC																					
City, State RI/CO		Site Spill ID		CLP Sample Numbers (from labels)				A Enter # from Box 7		B Conc. Low Mod High		C Sample Type: Comp / Grab		D Preservative from Box 6		E RAS Analysts VOA BNA Posv PCB High only ARO/TOX		F Regional Specific Tracking Number or Tag Numbers		G Station Location Number		H Mo/Day/Year/Time Sample Collection		I Sampler Initials		J Corresp. CLP Inorg. Samp. No.		K Enter Appropriate Qualifier for Designated Field QC B = Blank S = Spike D = Duplicate M = Matrix Error N = Not a QC Sample	
* x		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓	
RA11A178		1		L		G		6		X						8-130331,32		RA-SW-91		9/13/95 0430		TC1		---		B			
HA479		1		L		G		6		X						8-130333,34		WSW-01		9/13/95 1358		TC1		M11DA43					
HA479		1		L		G		6				X				8-130335,36		↓		1358		TC1		↓					
HA479		1		L		G		6						X		8-130337,38		↓		1358		TC1		↓					
HA480		2		L		G		6		X						8-130339,40		RA-W6W-01		9/13/95 1435		TC1		M11DA44					
HA480		2		L		G		6				X				8-130341,42		↓		1435		TC1		↓					
HA480		2		L		G		6						X		8-130343,44		↓		1435		TC1		↓					
HA481		5		L		G		6		X						8-130345		RA-WSE-01		9/13/95 1358		TC1		M11DA45					
HA481		5		L		G		6				X				8-130346		↓		1358		TC1		M11DA45					
HA481		5		L		G		6						X		8-130347		↓		1358		TC1		M11DA45					
Shipment for Case complete? (Y/N)				Page 1 of 5				Sample used for a spike and/or duplicate				Additional Sampler Signatures <i>D. C. Jones</i>				Chain of Custody Seal Number													

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) <i>D. C. Jones</i>	Date / Time 9/14/95 1800	Received by: (Signature) FED EX	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/None			

EPA Form 9110-2 (Rev. 5-91) Replaces EPA Form (2075-7), previous edition which may be used

DISTRIBUTION:

Blue - Region Copy Pink - SMO Copy White - Lab Copy for Return to Region Yellow - Lab Copy for Return to SMO

Split Samples ☐ Accepted (Signature)

☐ Declined

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

0 350188



United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 816 Alexandria, VA 22313
703-557-2400 FTS 557-2400

Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No.
(if applicable)

Case No.

24008

1. Project Code RA	Account Code 41861-58	2. Region No. 8	Sampling Co. URS	4. Date Shipped 9/15/95	Carrier FEDEX	6. Preservative (Enter in Column D) 1. HCl 2. HNO ₃ 3. NaHSO ₄ 4. H ₂ SO ₄ 5. Other (Specify) 6. Ice only N. Not preserved	7. Sample Description (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Rinseate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)
Regional Information		Sampler (Name) ROGER PERRELLA		Airbill Number 1255918912			
Non-Superfund Program		Sampler Signature <i>Roger Perrella</i>		5. Ship To RECAP ENVIRONMENTAL 8320 GUILFORD RD., BLDG F COLUMBIA, MD 21046 410-381-2288 ATTN: SAMPLE COORDINATOR			
Site Name RICO ARGENTINE		3. Type of Activity SF <input type="checkbox"/> PRP <input type="checkbox"/> ST <input type="checkbox"/> FED <input type="checkbox"/> PA <input type="checkbox"/> SSI <input type="checkbox"/> LSI <input checked="" type="checkbox"/> RIFS <input type="checkbox"/> RD <input type="checkbox"/> HA <input type="checkbox"/> O&M <input type="checkbox"/> NPLD <input type="checkbox"/> CLEM <input type="checkbox"/> REMA <input type="checkbox"/> REM <input type="checkbox"/> OIL <input type="checkbox"/> UST <input type="checkbox"/>					
City, State RICO, CO		Site Spill ID					

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp / Grab	D Preservative from Box 6	E RAS Analysts				F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC H = Blank S = Spike D = Duplicate PE = Perform Eval. -- = Not a QC Sample
					VOA	BNA	Post/PCB	High only ARO/TOX						
HA 925	2	Low	GRAB		X				8-130501/8-130502	RA-GW-01	9/14/95 1445	MP	111DA99	
HA 925					X				8-130503/8-130504	RA-GW-01		MP		
HA 925						X			8-130505/8-130506			MP		
HA 925						X			8-130507/8-130508			MP		
HA 925							X		8-130509/8-130510			MP		
HA 925							X		8-130511/8-130512			MP		
HA 926	5				X				8-130520	RA-SO-05	1440	MP	111DB00	
HA 926					X	X			8-130521		1440	MP		
HA 926							X		8-130523		1440	MP		
HA 926								MP						

Shipment for Case complete? (Y/N)	Page 1 of 3	Sample used for a spike and/or duplicate RA-GW-01/HA 925	Additional Sample Signatures <i>[Signature]</i>	Chain of Custody Seal Number
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CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 9/15/95 11:30	Received by: (Signature) FEDEX	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

1. Project Code RA		Account Code 410CL-58		2. Region No. 8		Sampling Co. URS		4. Date Shipped 9/15/95		Carrier FEDEX		6. Preservative (Enter in Column D)		7. Sample Description (Enter in Column A)			
Regional Information				Sampler (Name) ROGER PETRELLA				Airbill Number 1255918812				1. HCl 2. HNO ₃ 3. NaHSO ₄ 4. H ₂ SO ₄ 5. Other (Specify)				1. Surface Water 2. Ground Water 3. Leachate 4. Effluents 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)	
Non-Superfund Program				Sampler Signature <i>Roger Petrella</i>				5. Ship To RECRA ENVIRONMENTAL 8320 GUILFORD RD, BLDG F COLUMBIA, MD 21046 410-381-2285				6. Ice only N. Not preserved					
Site Name RICO ARGENTINE				3. Type of Activity				Remedial Removal									
City, State RICO, CO				Site Spill ID				SF <input type="checkbox"/> PAF <input type="checkbox"/> PA <input type="checkbox"/> RA <input type="checkbox"/> RD <input type="checkbox"/> REM <input type="checkbox"/> ST <input type="checkbox"/> SS <input type="checkbox"/> O&M <input type="checkbox"/> REM <input type="checkbox"/> FED <input type="checkbox"/> LSI <input checked="" type="checkbox"/> NPLD <input type="checkbox"/> UST <input type="checkbox"/>									
								ATTN: SAMPLE COORDINATOR									

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp/ Grab	D Preservative from Box 6	E RAS Analysis				F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC B - Blank S - Spike D - Duplicate PE - Performed Eval. - = Not a QC Sample
					VOA	BNA	Pest PCB	High only ARO/TOX						
HQ930	1	Low	GAB		X				8-130539	RA-SW-24	7/14/8 X45	RP	MHB037	
HQ930	1	Low	GAB			X			8-130540	RA-SW-24	↓ ↓ ↓ ↓	RP		
HQ930	1	Low	GAB				X		8-130541	RA-SW-24		RP		
HQ930	1	Low	GAB		X				8-130542	RA-SW-24		RP		
HQ930	1	Low	GAB			X			8-130543	RA-SW-24		RP		
HQ930	1	Low	GAB				X		8-130544	RA-SW-24		RP		
[Signature]														

Shipment for Case complete? **(N)**

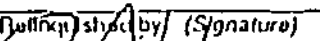
Page of **3**
3

Sample used for a spike and/or duplicate
HQ925

Additional Sampler Signatures
(Signature)

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) 	Date / Time 9/15/95 11:30	Received by: (Signature) Fed Ex	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

Split Samples ☐ Accepted (Signature)
☐ Declined

0 350184



United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

SAS No.
(if applicable)

Case No.

24008

1. Project Code RA	Account Code 41861-58	2. Region No. 8	Sampling Co. URS	4. Date Shipped 9/15/95	Carrier FEDEX	8. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field OC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)	7. Preservative (Enter in Column D) 1. HCl 2. HNO ₃ 3. NaOH 4. H ₂ SO ₄ 5. K ₂ Cr ₂ O ₇ 6. Ice only 7. Other (specify in Column D) N. Not preserved
Regional Information		Sampler (Name) ROGER PETRELLA		Albitt Number 1255918823			
Non Superfund Program		Sampler Signature <i>[Signature]</i>		5. Ship To SOUTH WEST LABS OF OKLAHOMA 1700 W. ALBANY, SUITE C BROKEN ARROW, OK 74012 918-251-2858			
Site Name RICO ARGENTINE		3. Purpose <input type="checkbox"/> SF <input type="checkbox"/> PRP <input type="checkbox"/> ST <input type="checkbox"/> FED <input checked="" type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> HI <input type="checkbox"/> SI <input checked="" type="checkbox"/> ESI <input type="checkbox"/> FS <input type="checkbox"/> AD <input type="checkbox"/> RA <input type="checkbox"/> O&M <input type="checkbox"/> INPLD		ATTN: SAMPLE COORDINATOR			
City, State RICO CO	Site Split ID						

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7) Other:	E - RAS Analysis						F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier B - Blank S - Spike D - Duplicate E - Duplicate FE - Field Error - Not a QC Sample
					Dist. Metals	Total Metals	Dyanide	NO ₂ /NO ₃	Fluoride	PH	Conduct.					
MHDD35	5	LOW	GAAB			X						8-130532	RA-WSO-09	9/14/95 1400	HA 929	KLP
MHDD35	5	LOW	GAAB			X						8-130533	RA-WSO-08	9/14/95 1400	HA 929	KLP
MHDD37	1	LOW	GAAB	2		X						8-130537	RA-SW-24	9/14/95 1645	HA 930	KLP
MHDD37	1	LOW	GAAB	3		X						8-130539	RA-SW-24	9/14/95 1645	HA 930	KLP
MHDD38	5	LOW	GAAB			X						8-130545	RA-SO-07	9/14/95 1710		KLP
MHDD38	5	LOW	GAAB			X						8-130546	RA-SO-07	9/14/95 1710		KLP

Shipment for Case Complete? Y/N	Page 2 of 2	Sample(s) to be Used for Laboratory QC MHDA 99	Additional Sample Signatures <i>[Signature]</i>	Chain of Custody Seal Number(s)
--	---------------------------	--	--	---------------------------------

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 9/15/95 11:30	Received by: (Signature) FEDEX	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

DISTRIBUTION:

Green - Region Copy

White - Lab Copy for Return to Region

Pink - SMO Copy

Yellow - Lab Copy for Return to SMO

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

SEE REVERSE FOR PURPOSE CODE DEFINITIONS

421-012-5 REV. 3/93

APPENDIX B
PHOTOLOG

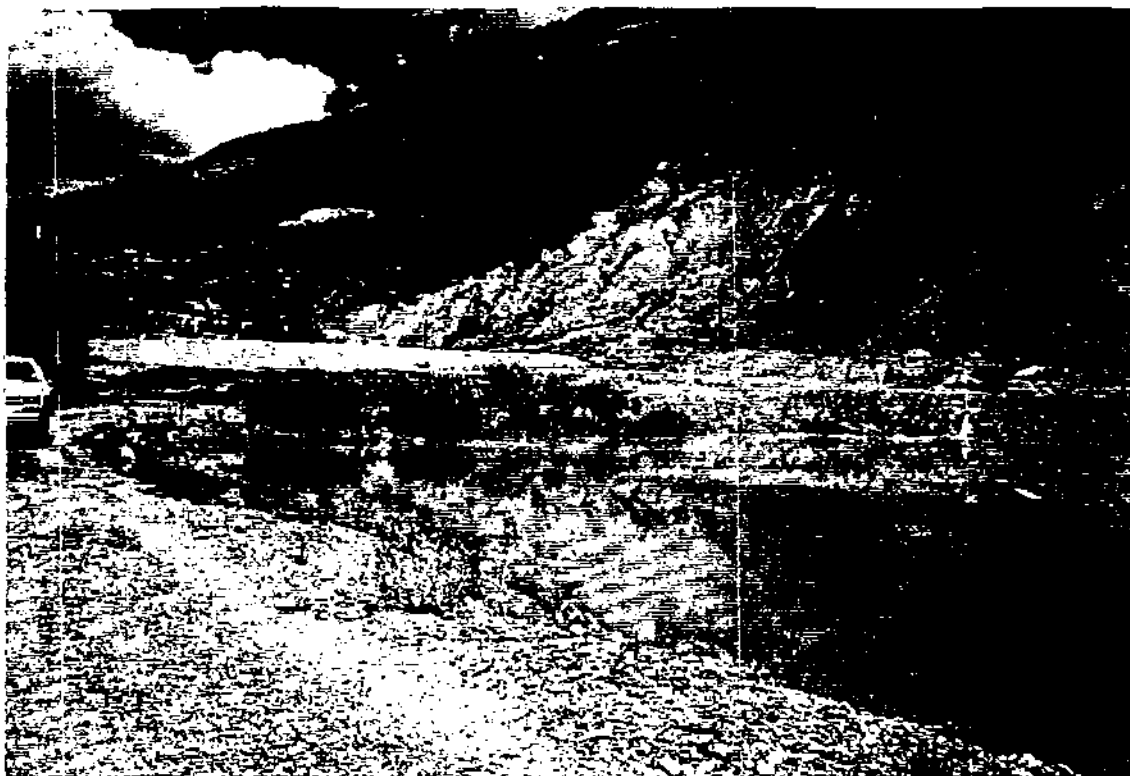


PHOTO 1

Sample location RA-WSW/WSE-01. St. Louis Tunnel. Uppermost of settling ponds. Outfall is in the upper right corner under the little shack. Water in the pond is about six to eight inches deep. Iron staining is from sediment.



PHOTO 2

Sample location RA-WSO-03. T. Joseph collecting sample from the tailings pile on the north bank of Silver Creek.

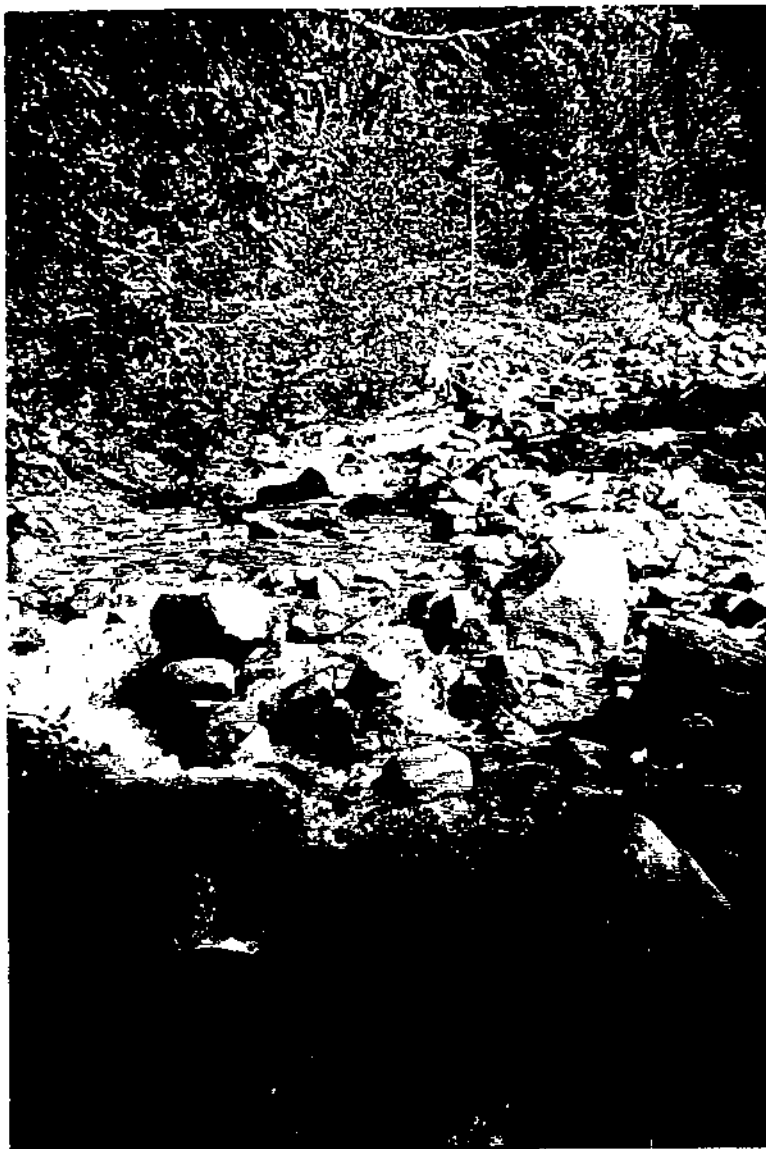


PHOTO 3

Silver Creek upstream of sample location RA-SW/SE-06. Note the rusty-colored iron staining of cobbles in the stream bed.



PHOTO 4

Sample RA-WSW/WSE-03 taken from the ditch between the upper settling ponds and the Dolores River. Note the orange staining.

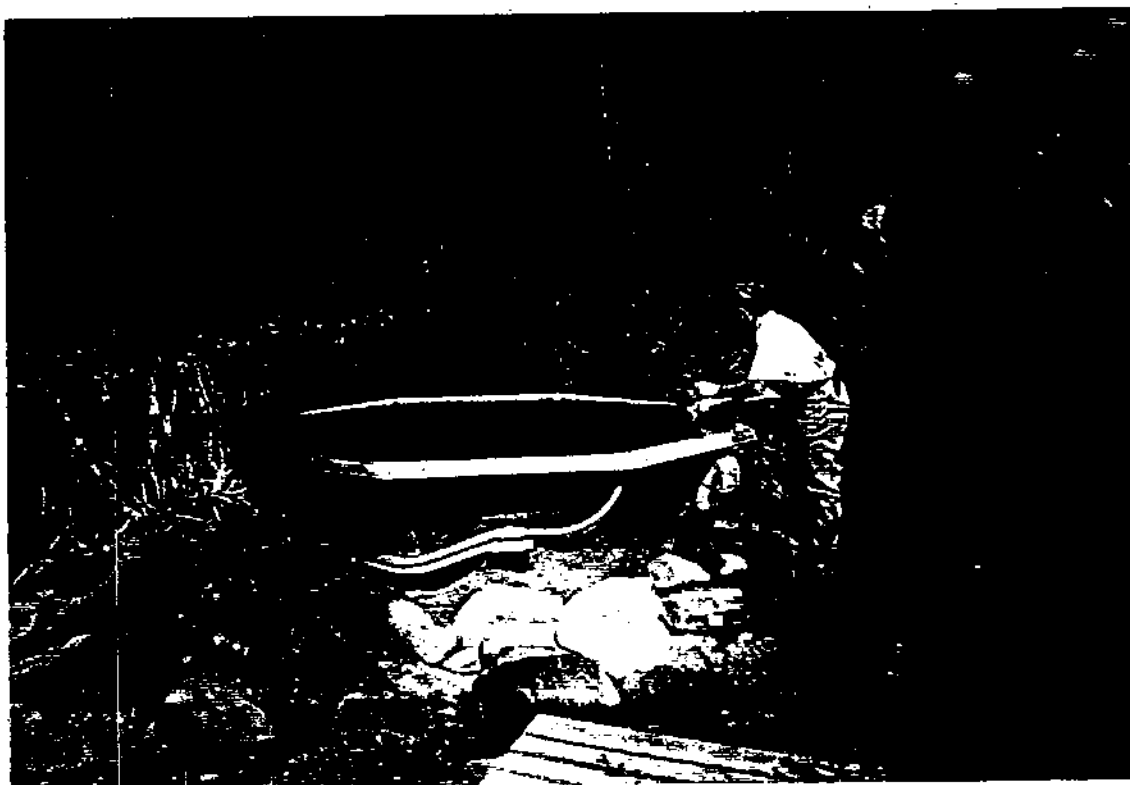


PHOTO 5

R. Badger taking sample RA-WGW-02 from PVC pipe leading into the community-use hot tub. Note the iron oxide stained carbonate deposits around the tub.



PHOTO 6

Second hot spring from the hot spring area. Note water is forcibly ejecting. Flow is about 15 to 20 gallons per minute. Note iron stained carbonate deposits.

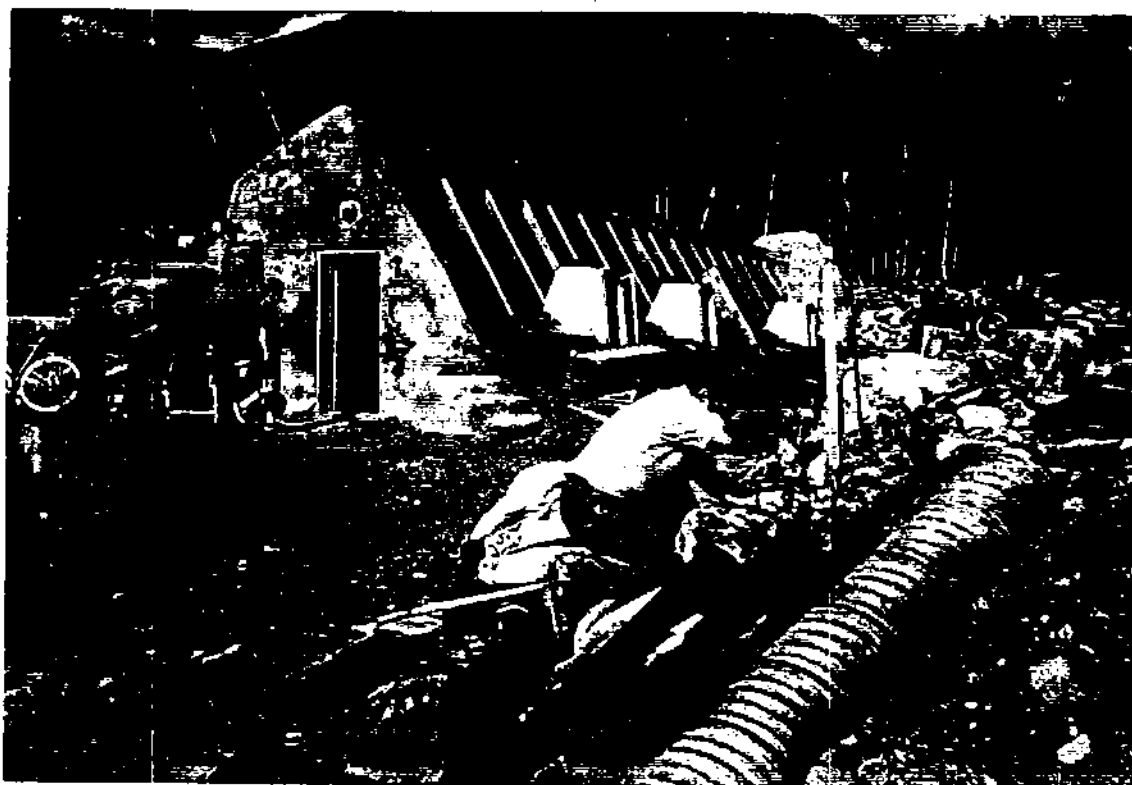


PHOTO 7

R. Petrella collecting Residential Soil Sample RA-SO-02 at the Lindaur residence.



M. Leslie collecting Residential Soil Sample RA-SO-03 at the Folsom residence.

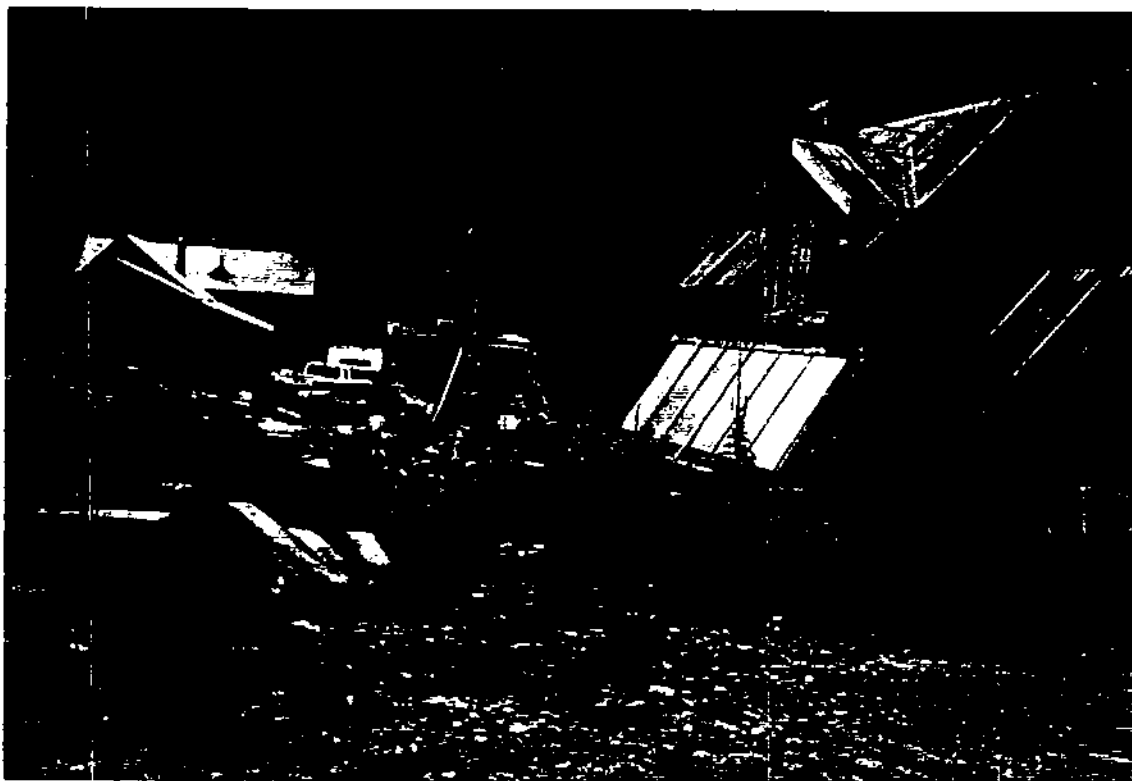


PHOTO 9

M. Leslie collecting Residential Soil Sample RA-SO-04 at the Hogan Residence.

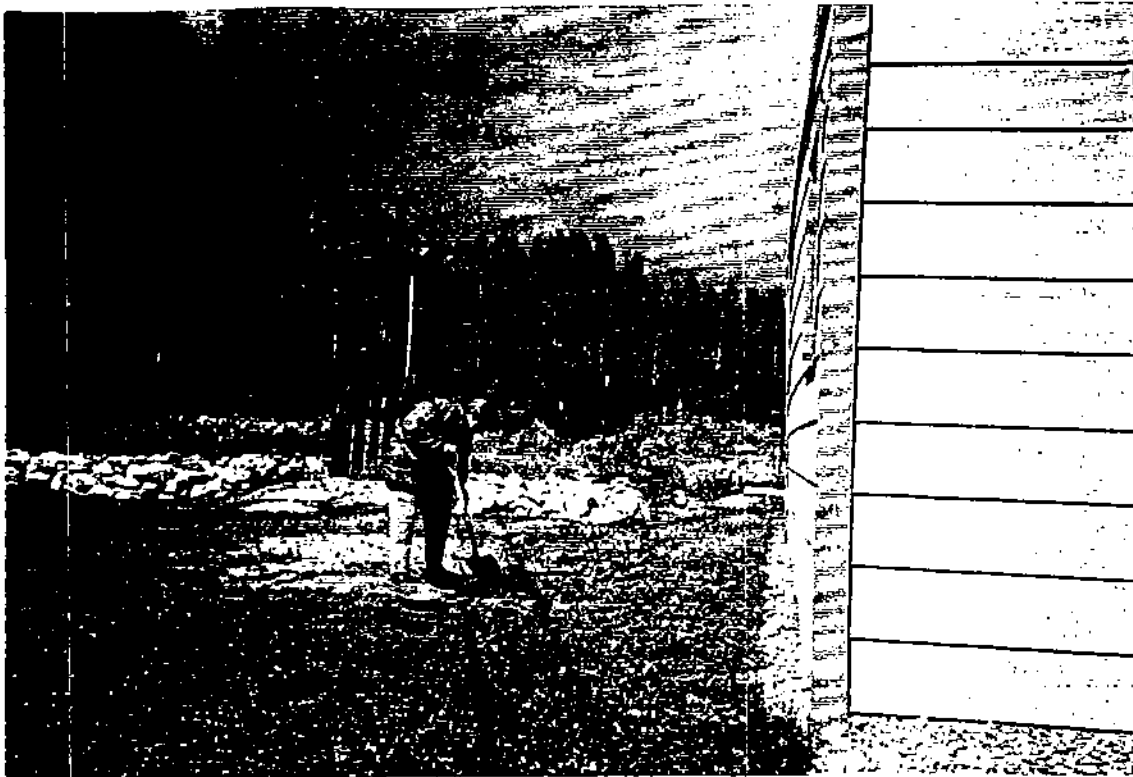


PHOTO 10

M. Leslie collecting Residential Soil Sample RA-SO-05 at the Ferando residence.



PHOTO 11

R. Badger collecting Residential Soil Sample RA-SO-06 at the Kneppel residence.



PHOTO 12

View of tailings pile at RA-SW/SE-08 just south of town of Rico. Dolores River is on the left side of photo where it is actively eroding the tailings. Tailings were sampled as RA-WSO-06.



PHOTO 13

View to south along Dolores River of tailings pile split by Dolores River at RA-SW/SE-09. Tailings on left (east) side of river were sampled as RA-WSO-09.

APPENDIX C

SITE INSPECTION DATA SUMMARY

SI Data Summary

Site Name Rico - ArgentineSite Name Rico - ArgentineEPA Region VIII Date 2/96

Contractor Name or State Office and Address

UOS 1099 18th St.Denver CO 80202

GENERAL SITE INFORMATION

1. CERCLIS ID No. COD980952519Address State Highway 145City RicoCounty Dolores State CO Zip Code 81332

Congressional District _____

2. Owner name Rico Development CorpOperator name Wayne WebsterOwner address P.O. Box 130

Operator address _____

City Rico State CO

City _____ State _____

3. Type of ownership (check all that apply):

☒ Private ☐ Federal/Agency ☐ State ☐ County ☐ Municipal☐ Other _____ Reference(s) _____4. Approximate size of property: 75 acres

Reference(s) _____

5. Latitude 37° 42' 05" Longitude 108° 01' 39"Reference(s) USGS 19606. Site status: ☐ Active ☒ Inactive ☐ UnknownReference(s) URS 19957. Years of operation: From: 1860 to: present ☐ UnknownReference(s) URS 1995

8. Previous Investigations:

Type	Agency/State/Contractor	Date
SI	EPA (TAT)	1984
	Bureau of Reclamation	1991?
SIP	EPA (ARCS)	1994

Reference(s) E & E 1985Reference(s) Bureau of Rec, undatedReference(s) URS 1994

Reference(s) _____

Reference(s) _____

Reference(s) _____

WASTE SOURCE INFORMATION

1. Waste source types (check all that apply)

- ☐ Constituent
- ☐ Wastestream (type) _____
- ☐ Landfill
- ☐ Drums
- ☒ Contaminated soil
- ☐ Land treatment
- ☐ Tanks or non-drum containers (type) _____
- ☐ Pile (type) _____
- ☐ Surface impoundment (buried)
- ☐ Surface impoundment (backfilled)
- ☒ Other settling ponds

Reference(s) UOS 1996

2. Types of wastes (check all that apply)

- ☐ Organic chemicals
- ☒ Inorganic chemicals
- ☐ Municipal wastes
- ☐ Radionuclides
- ☐ Metals
- ☐ Pesticides/Herbicides
- ☐ Solvents
- ☐ Other _____

Reference(s) UOS 1996

3. Summarize history of waste disposal operations:

Tailing piles are found along both Silver Creek
and the Dolores River, from past mining activities.
Mineralized waters are seeping from beneath tailing piles along
Silver Creek into Silver Creek. Drainage from the mine
workings is passed through a series of settling ponds and discharged
into the river.

Reference(s) UOS 1996

SI Data Summary

Site Name Rico - Argentine

4. Source characterization (Attach pages to show quantity and calculations.)

Source 1 name: Tailing piles along Silver Creek Source type Contaminated SoilDescribe source: Tailing piles along Silver CreekGround water migration containment: noneSurface water migration containment: noneAir migration (gas and migration) containment: nonePhysical state of wastes: ☐ Liquid ☒ Solid ☐ Sludge/Slurry ☐ Gas ☐ Unknown

Constituent quantity of hazardous substances: _____ (specify units)

Wastestream quantity containing hazardous substances: _____ (specify units)

Volume of source (yd³): _____ Area of source (ft²): 600,000

Hazardous substances associated with source 1:

<u>Cadmium</u>	<u>Arsenic</u>	<u>Mercury</u>
<u>Copper</u>	<u>Lead</u>	<u>Nickel</u>
<u>Silver</u>	<u>Manganese</u>	<u>Zinc</u>
		<u>Chromium</u>

Reference(s) UOS 1996Source 2 name: Settling ponds along Dolores River Source type Water & SedimentDescribe source: A series of settling ponds between St. Louis tunnel and outfall #.Ground water migration containment: noneSurface water migration containment: all berms around pondsAir migration (gas and migration) containment: nonePhysical state of wastes: ☒ Liquid ☒ Solid ☐ Sludge/Slurry ☐ Gas ☐ Unknown

Constituent quantity of hazardous substances: _____ (specify units)

Wastestream quantity containing hazardous substances: _____ (specify units)

Volume of source (yd³): _____ Area of Source (ft²): 360,000

Hazardous substances associated with source 2:

<u>Cadmium</u>	<u>Zinc</u>	<u>Mercury</u>
<u>Copper</u>	<u>Silver</u>	
<u>Silver</u>	<u>Antimony</u>	

Reference(s) UOS 1996

SI Data Summary

Site Name Rico - Argentine

CONTINUATION PAGE FOR SOURCE CHARACTERIZATION

Source # NA Name _____ Source type _____

Describe source: _____

Ground water migration containment: _____

Surface water migration containment: _____

Air migration (gas and migration) containment: _____

Physical state of wastes: ☐ Liquid ☐ Solid ☐ Sludge/Slurry ☐ Gas ☐ Unknown

Constituent quantity of hazardous substances: _____ (specify units)

Wastestream quantity containing hazardous substances: _____ (specify units)

Volume of source (yd³): _____ Area of source (ft²): _____

Hazardous substances associated with source # _____:

Reference(s) _____

Source # NA Name _____ Source type _____

Describe source: _____

Ground water migration containment: _____

Surface water migration containment: _____

Air migration (gas and migration) containment: _____

Physical state of wastes: ☐ Liquid ☐ Solid ☐ Sludge/Slurry ☐ Gas ☐ Unknown

Constituent quantity of hazardous substances: _____ (specify units)

Wastestream quantity containing hazardous substances: _____ (specify units)

Volume of source (yd³): _____ Area of source (ft²): _____

Hazardous substances associated with source # _____:

Reference(s) _____

SI Data Summary

Site Name Rico-Argentine

5. Description of removal or remedial activities

If a removal has occurred, identify the removal authority and describe the activities. Specify the date(s) of the removal.

Various remedial activities have been conducted at the site. The activities have been largely conducted by Aracunda/ARCO.

Activities have included building a lime treatment plant for St. Louis tunnel outfall; Capping wells, backfilling adits, installing fences and posting territory as off limits.

Reference(s)

URS 1995

SI Data Summary

Site Name Pico - Argentine

GROUND WATER INFORMATION

1. Ground water drinking water use within 4 miles of site sources:

☐ Municipal ☒ Private ☐ Both ☐ No Drinking Water UseReference(s) UOS 1996

2. Is ground water contaminated?

☐ Yes ☒ No ☐ Uncertain but likely ☐ Uncertain but not likely☐ Additional sampling requiredIs analytical evidence available? ☒ Yes ☐ NoReference(s) UOS, 1996

3. Is ground water contamination attributable to the site?

☐ Yes ☐ No ☐ Additional sampling required ☒ Not ApplicableReference(s) UOS 1996NA

4. Are drinking water wells contaminated?

☐ Yes ☒ No ☐ Uncertain but likely ☐ Uncertain but not likely☐ Additional sampling requiredIs analytical evidence available? ☒ Yes ☐ NoReference(s) UOS 1996

5. Net precipitation (HRS Section 3.1.2.2):
- 4.1
- inches

Reference(s) Univ of Delaware, K86

6. County average number of persons per residence:
- 2.59
- Reference(s)
- 1990 Census - U.S. Dept of C.

7. Discuss general stratigraphy underlying the site. Attach sketch of stratigraphic column.

The uppermost layer of material is alluvial and landslide materials. The Hermosa formation (interlayered limestones and coarse sandstones) underly the unconsolidated materials. An intrusive body has deformed the Hermosa Fm.

Reference(s)

USGS 1974

8. Using Table GW-1 (next page), summarize geology underlying the site (starting with formation #1 as closest to ground surface). Indicate if formation is interconnected with overlying formation.

SI Data Summary

Site Name Rico - Argentine

TABLE GW-1: SITE GEOLOGY

NAME OF FORMATION	INTER-CONNECT? (yes/no)	TYPE OF MATERIAL	AVERAGE THICKNESS (FEET)	HYDRAULIC CONDUCTIVITY (CM/SEC)	USED FOR DRINKING WATER?
1. Alluvial/Landslide	?	Sand, Gravel	10-100 ft.	10^{-2} to 10^{-1}	yes
2. Hermosa Fm	?	Sandstones and limestones	500 ft.	10^{-4} to 10^{-5}	no
3.					
4.					
5.					
6.					

Reference(s)

USGS 1974

9. Does a karst aquifer underlie any site source?

☐ Yes ☐ No

possibly in Hermosa Fm

Reference(s) USGS 198710. Depth to top of aquifer: 10 feet Elevation: 9000 Reference(s) USGS 1987

11. In the table below, enter the number of people obtaining drinking water from wells located within 4 miles of the site. For each aquifer, attach population calculation sheets. Key aquifer to formations listed in Table GW-1.

POPULATION SERVED BY WELLS WITHIN DISTANCE CATEGORIES BY AQUIFER

DISTANCE OF WELL(S) FROM SITE SOURCES	AQUIFER A: INCLUDES FORMATIONS <u>1</u>	AQUIFER B: INCLUDES FORMATIONS _____	AQUIFER C: INCLUDES FORMATIONS _____
1/4 mile or less			
>1/4 to 1/2 mile			
>1/2 to 1 mile	2-6 summer residents		
>1 to 2 miles			
>2 to 3 miles			
>3 to 4 miles			

Reference(s)

URS 1995

12. Is ground water from multiple wells blended prior to distribution?

☐ Yes ☒ NoReference(s) URS 1995

SI Data Summary

Site Name Rio - Argentine

13. Is ground water blended with surface water?

☐ Yes ☒ No

Reference(s) URS 1995

Briefly describe: _____

14. Distance from any incompletely contained source available to ground water to nearest drinking water well (HRS Section 3.3.1): 1000 feet

Reference(s) URS 1995

15. Briefly describe standby drinking water wells within 4 miles of sources at the site:

None

Reference(s) URS 1995

16. Using Table GW-2, summarize ground water analytical results for all sampling investigations. Include and identify background ground water sample results.

- 17.* Ground water resources within 4 miles of site sources (HRS Section 3.3.3):

- ☐ Irrigation (5-acre minimum) of commercial food or commercial forage crops
☐ Commercial livestock watering
☐ Ingredient in commercial food preparation
☐ Supply for commercial aquaculture
☐ Supply for major or designated water recreation area, excluding drinking water use
☐ Water usable for drinking water but no drinking water wells are within 4 miles
☒ None of the above

Reference(s) URS 1995

18. Wellhead protection area (WHPA) within 4 miles of site sources (HRS Section 3.3.4):

- ☐ Source with non-zero containment factor value lies within or above WHPA
☐ Observed ground water contamination attributable to site source(s) lies within WHPA
☐ WHPA lies within 4 miles of site sources
☒ None

Reference(s) URS 1995

Additional ground water pathway description:

The is only one groundwater well documented
in the site area. This well is topographically higher
than site sources, up gradient on the Dolores River.

References(s) URS 1995

TABLE GW-2: ANALYTICAL RESULTS FOR GROUND WATER PATHWAY

see table

SAMPLE ID & DATE	TYPE OF WELL <input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____	SCREENED INTERVAL	HAZARDOUS SUBSTANCE	CONCENTRATION (SPECIFY UNITS)	DETECTION LIMIT	REFERENCES
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					

SURFACE WATER INFORMATION

Complete this section of the data summary for each watershed if there are multiple watersheds. Photocopy this page if necessary.

1. Describe surface water migration path from site sources to at least 15 miles downstream. Attach a sketch of the surface water migration route.

See Figure
Surface water from Silver Creek enters the Dolores River. The Dolores river flows downstream through a mountainous canyon for 15 miles

Reference(s) URS 1995

2. Is surface water contaminated?

☒ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely ☐ Additional sampling required
Is analytical evidence available? ☒ Yes ☐ No Reference(s) URS 1996

3. Is surface water contamination attributable to the site?

☒ Yes ☐ No ☐ Additional sampling required Reference(s) URS 1996

4. Floodplain category in which site sources are located (check all that apply):

☒ 1-year ☒ 10-year ☒ 100-year ☒ 500-year ☐ None Reference(s) URS 1995

5. Describe flood containment for each source (HRS Section 4.1.2.1.2.2):

Source #1 Tailing/Silver Creek Flood containment alone

Source #2 Selling Ponds Flood containment berms

Source #3 _____ Flood containment _____

Source # _____ Flood containment _____

Source # _____ Flood containment _____

Source # _____ Flood containment _____

Source # _____ Flood containment _____

Reference(s) _____

6. Shortest overland distance to surface water from any source (HRS Section 4.1.2.1.2.1.3):

20 feet Reference(s) URS 1995

7. Size of drainage area (HRS Section 4.4.3): 4,500 Acres

Reference(s) USGS 1960

SI Data Summary

Site Name Rico - Argentine

8.* Describe predominant soil group within the drainage area (HRS Section 4.1.2.1.2.1.2).

Sandy / Gravelly loams

Reference(s)

URS 1995

9.* 2-year 24-hour rainfall (HRS Section 4.1.2.1.2.1.2):

1.5 inchesReference(s) Diwele / Leopold, 1978

10.* Elevation of the bottom of nearest surface water body:

8800 feet above sea levelReference(s) USGS 1960

11.* Elevation of top of uppermost aquifer:

9200 feet above sea levelReference(s) USGS 1960

12. Predominant type of water body between probable point of entry to surface water and nearest drinking water intake:

☒ River ☐ LakeReference(s) USGS 1960

13. Identify all drinking water intakes, fisheries, and sensitive environments within 15 miles downstream.

TARGET NAME/TYPE	WATER BODY TYPE	DISTANCE FROM PPE	FLOW (CFS)	TARGET CHARACTERISTICS ¹	TARGET SAMPLED?
Trout Fishery	River	0.0	136		
Wetlands	River	1/2 - 1	136		

¹If target is a drinking water intake, provide number of people served by intake.

If target is a fishery, provide species and annual production of human food chain organisms (pounds per year).

If target is a wetland, specify wetland frontage (in miles). Attach calculation pages.

Reference(s)

URS 1995

14. Is surface water drinking water blended prior to distribution?

☐ Yes ☐ No

Reference(s)

NA

SI Data Summary

Site Name Pico - Argentine

15. Describe any standby drinking water intakes within 15 miles downstream.

None identified

Reference(s) _____

16. *Surface water resources within 15 miles downstream (HRS Section 4.1.2.3.3):

- ☐ Irrigation (5-acre minimum) of commercial food or commercial forage crops
- ☐ Commercial livestock watering
- ☐ Ingredient in commercial food preparation
- ☐ Major or designated water recreation area, excluding drinking water use
- ☐ Water designated by the state for drinking water use but is not currently used
- ☐ Water usable for drinking water but no drinking water intakes within 15 miles downstream
- ☒ None of the above

Reference(s) URS 1995

17. Using Table SW-1, summarize surface water analytical results for all sampling investigations. Include and identify background sample results.

SI Data Summary

Site Name

Rico - Argentine

SOIL INFORMATION

1. Is surficial or soil contamination present at the site?

☒ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely☐ Additional sampling requiredIs analytical evidence available? ☒ Yes ☐ NoReference(s) URS 1995

2. Is surficial or soil contamination attributable to the site?

☒ Yes ☐ No ☐ Additional sampling required

3. Is surficial contamination on the property and within 200 feet of a residence, school, daycare center, or workplace?

☒ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely☐ Additional sampling requiredIs analytical evidence available? ☒ Yes ☐ NoReference(s) URS 1995

4. Total area of surficial contamination (HRS Section 5.2.1.2):

_____ square feet

Reference(s) _____

5. Attractiveness/accessibility of the areas of observed contamination (HRS Section 5.2.1.1). Check all that apply:

☐ Designated recreational area☐ Used regularly, or accessible and unique recreational area☒ Moderately accessible with some use☐ Slightly accessible with some use☐ Accessible with no use☐ Inaccessible with some use☐ Inaccessible with no use

Reference(s)

URS 1995

6. Using Table SE-1, summarize analytical results detecting surficial contamination within 200 feet of a residence, school, daycare center, or workplace. Include and identify background sample results.

7. Using Table SE-2, summarize analytical results detecting surficial contamination within the boundary of a resource or a terrestrial sensitive environment. Include and identify background sample results if not listed in Table SE-1.

8. Population within 1-mile travel distance from site. Do not include populations from Table SE-1.

DISTANCE FROM SITE SOURCES	POPULATION
1/4 mile or less	100
> 1/4 to 1/2 mile	150
> 1/2 to 1 mile	192

Reference(s)

Bob Small - Rico Mayor

TABLE SW-1: SUMMARY OF ANALYTICAL RESULTS FOR SURFACE WATER PATHWAY

see table

SAMPLE ID & DATE	SAMPLE TYPE	SAMPLE OBJECTIVE	TARGET NAME	HAZARDOUS SUBSTANCE	CONCENTRATION (SPECIFY UNITS)	DETECTION LIMIT	REFERENCES
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					

TABLE SE-1: ANALYTICAL RESULTS FOR SOIL EXPOSURE PATHWAY

SAMPLE ID & DATE	SAMPLE DEPTH	TYPE OF PROPERTY <input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace	POPULATION	HAZARDOUS SUBSTANCE	CONCENTRATION (SPECIFY UNITS)	DETECTION LIMIT	REFERENCES
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					

TABLE SE-2: ANALYTICAL RESULTS FOR SOIL EXPOSURE PATHWAY

SAMPLE ID & DATE	SAMPLE DEPTH	TYPE OF TARGET	HAZARDOUS SUBSTANCE	CONCENTRATION (SPECIFY UNITS)	DETECTION LIMIT	REFERENCES
		<input type="checkbox"/> Terrestrial sensitive environment <hr/> <input type="checkbox"/> Resources* <input type="checkbox"/> Commercial agriculture <input type="checkbox"/> Commercial silviculture <input type="checkbox"/> Commercial livestock production or grazing				
		<input type="checkbox"/> Terrestrial sensitive environment <hr/> <input type="checkbox"/> Resources* <input type="checkbox"/> Commercial agriculture <input type="checkbox"/> Commercial silviculture <input type="checkbox"/> Commercial livestock production or grazing				
		<input type="checkbox"/> Terrestrial sensitive environment <hr/> <input type="checkbox"/> Resources* <input type="checkbox"/> Commercial agriculture <input type="checkbox"/> Commercial silviculture <input type="checkbox"/> Commercial livestock production or grazing				
		<input type="checkbox"/> Terrestrial sensitive environment <hr/> <input type="checkbox"/> Resources* <input type="checkbox"/> Commercial agriculture <input type="checkbox"/> Commercial silviculture <input type="checkbox"/> Commercial livestock production or grazing				

AIR INFORMATION

1. Is air contamination present at the site?

☐ Yes ☐ No ☐ Uncertain but likely ☒ Uncertain but not likely
☐ Additional sampling requiredIs analytical evidence available? ☐ Yes ☒ NoReference(s) URS 1995

2. Is air contamination attributable to the site?

☐ Yes ☒ No ☐ Additional sampling required

3. Are populations, sensitive environments, or wetlands exposed to airborne hazardous substances released from the site?

☐ Yes ☐ No ☐ Uncertain but likely ☒ Uncertain but not likely
☐ Additional sampling requiredIs analytical evidence available? ☐ Yes ☒ NoReference(s) URS 1995

4. Evidence of biogas release from any of the following source types at the site:

☐ Below-ground containers or tanks ☐ Landfill ☐ Buried surface impoundment
Reference(s) NA

5.* Particulate migration potential factor value: _____ (HRS Figure 6-2)

6.* Particulate mobility factor value: _____ (HRS Figure 6-3)

7. Distance from any incompletely contained source to nearest residence or regularly occupied area: 1/10 miles Reference(s) URS 1995

8. Population within 4 miles of site sources.

DISTANCE FROM SITE SOURCES	POPULATION
0 (within site sources)	0
1/4 mile or less	100
> 1/4 to 1/2 mile	150
> 1/2 to 1 mile	192
> 1 to 2 miles	200
> 2 to 3 miles	205
> 3 to 4 miles	210

Reference(s) URS 1995

9.* Resources within 1/2 mile of site sources (HRS Section 6.3.3):

☐ Commercial agriculture☐ Commercial silviculture☒ Major or designated recreation area☐ None of the aboveReference(s) URS 1995

SI Data Summary

Site Name Pico-Argentine

10. Sensitive environments and wetlands within 4 miles of the site.

NAME/DESCRIPTION/LOCATION OF SENSITIVE ENVIRONMENT OR WETLAND	DISTANCE FROM SITE (MILES)	TYPE OF SENSITIVE ENVIRONMENT	WETLAND SIZE (ACRES)
Wetlands along			
Dolores River below	0.5 to 1.0		15.0
(downstream) of Silver Creek			
and the town of Pico			

Reference(s)

URS 1995

11. Using Table Air-1, summarize air analytical results for all sampling investigations. Include and identify background sample results.

NO Air samples

TABLE AIR-1: SUMMARY OF ANALYTICAL RESULTS FOR AIR PATHWAY

SAMPLE ID & DATE	SAMPLE TYPE	DISTANCE FROM SITE (MILES)	TARGET(S) WITHIN DISTANCE CATEGORY	HAZARDOUS SUBSTANCE	CONCENTRATION (SPECIFY UNITS)	DETECTION LIMIT	REFERENCES
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				

SI Data Summary

Site Name _____

ADDITIONAL INFORMATION AND COMMENTS

[illegible]

Reference(s) _____

APPENDIX D

**VALIDATION REPORTS AND
LABORATORY DATA**

(under separate cover)